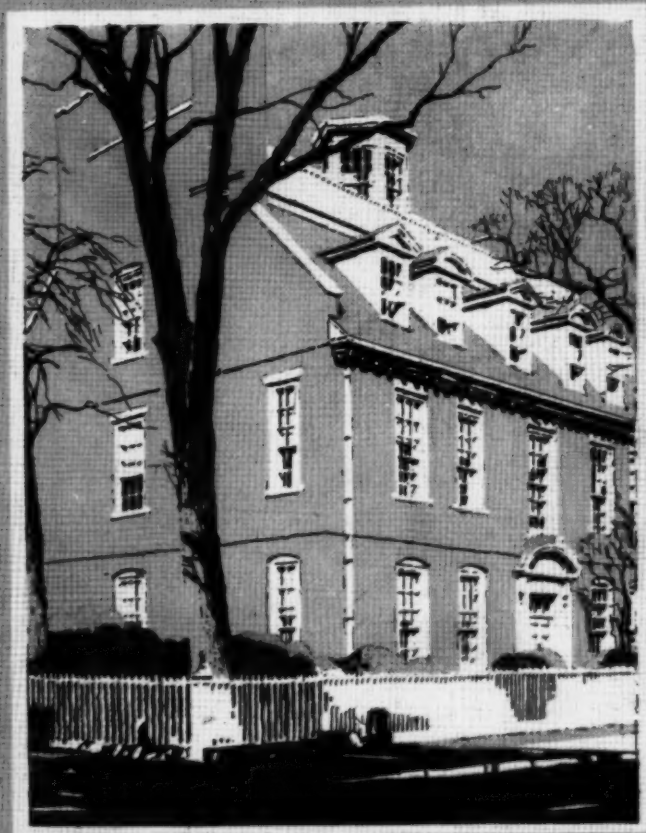


OCT 23 1925

THE ARCHITECTURAL FORUM



OCTOBER
1925



A thumbnail sketch of what happens where R-W Automatic Fire Doors and Fire Door Hardware is used for doorways and other fire-wall openings of any character. The doors present a tight, fire-proof front against the flames. They may spread—but *not through the doorways*. Open doorways are an invitation to fire, creating terrific draughts. R-W Fire Door Equipment has the label of the Underwriters Laboratories. The line is the most complete and extensive of the kind manufactured. Write for Catalog.

Indicative of the R-W Line

From a finger an artist can draw the man. From R-W Automatic Fire Doors and Fire Door Hardware the supreme quality and perfect performance of all R-W products can be visualized. R-W hangers for every door that slides—house, barn, elevator, garage and industrial are just as sure in

their operation, just as enduring, banishing all doorway troubles. Built the right way—is the short way to say it. Use the R-W Engineering Department in all your problems of doorways—vital points in all buildings. The service is free.

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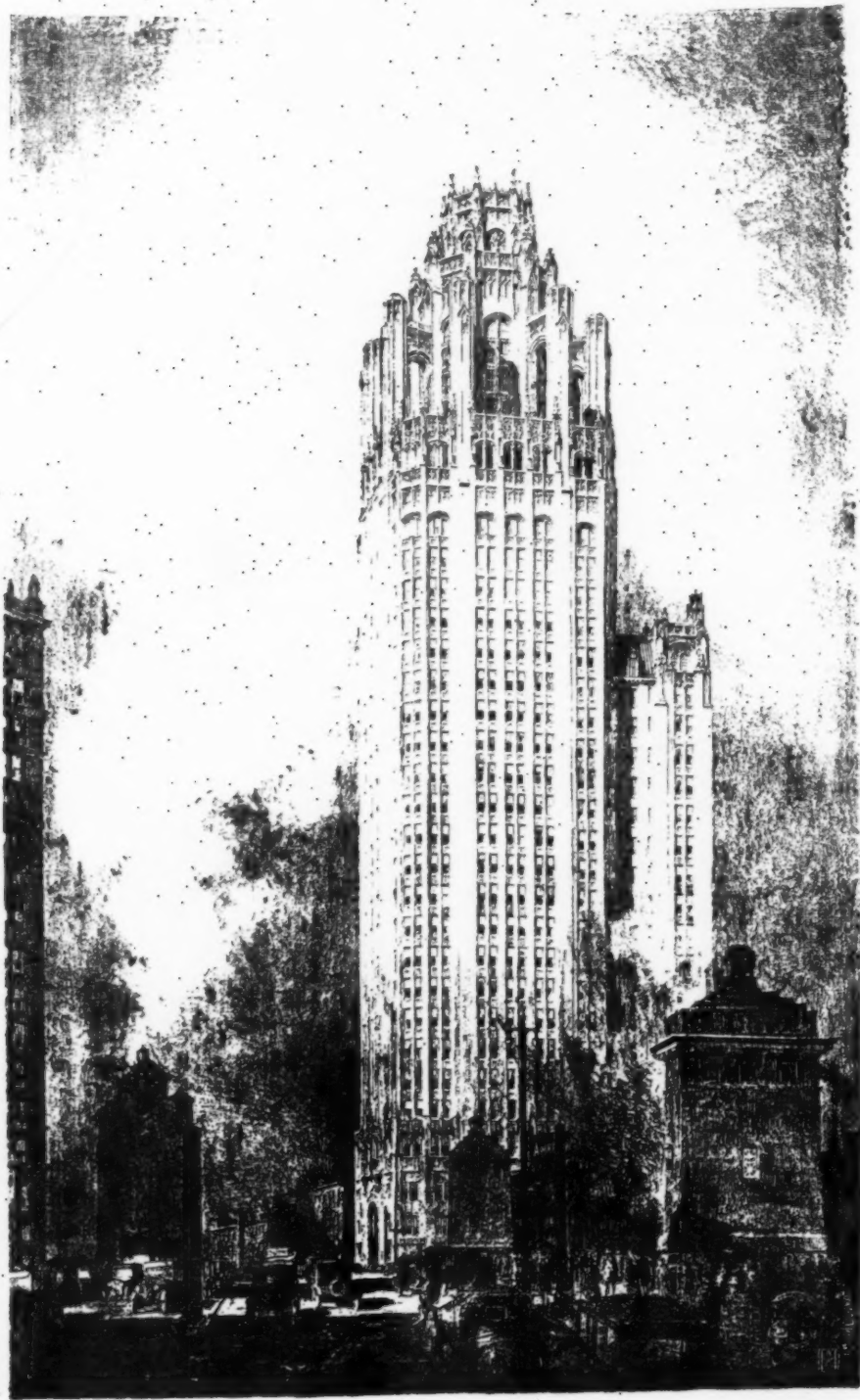
A Hanger for any Door that Slides.

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TRIBUNE TOWER, CHICAGO

JOHN M. HOWELLS AND RAYMOND M. HOOD, ASSOCIATED ARCHITECTS

From a Lithograph by Birch Burdette Long

The ARCHITECTURAL FORUM

VOLUME XLIII

OCTOBER 1925

NUMBER 4

✓ The Tribune Tower, Chicago

JOHN M. HOWELLS AND RAYMOND M. HOOD, Associated Architects

COMPLETION of the *Tribune Tower* in Chicago is an event of historic interest in the development of American architecture. Seldom has any artistic or architectural undertaking aroused greater or more universal interest than has the erection of this monument to one of the greatest journals in the world. The avowed purpose of that public spirited man, Col. Robert R. McCormick, to whose courage, foresight and generosity were largely due the conception and completion of this great undertaking, was the enhancement of the city's civic beauty, and the securing for Chicago of the most beautiful office building in the world. No architectural competition ever aroused greater interest than that announced in June, 1922, for the purpose of securing the finest architectural design obtainable for an office building of great height. This competition, which brought worldwide response because it was given worldwide publicity, was judged on December 3, 1922, by a distinguished Jury composed of architects, business men and journalists, and the prize was awarded to John M. Howells and Raymond M. Hood, associated architects, of New York. The artistic thought and the architectural ideas of 23 countries were represented in the remarkable group of drawings submitted in this competition. The architects of the world seemed to have formed a league, as it were, for the new and bold treatment of the theme of the skyscraper, a theme which has already made a marked impression on the recent development of American commercial architecture.

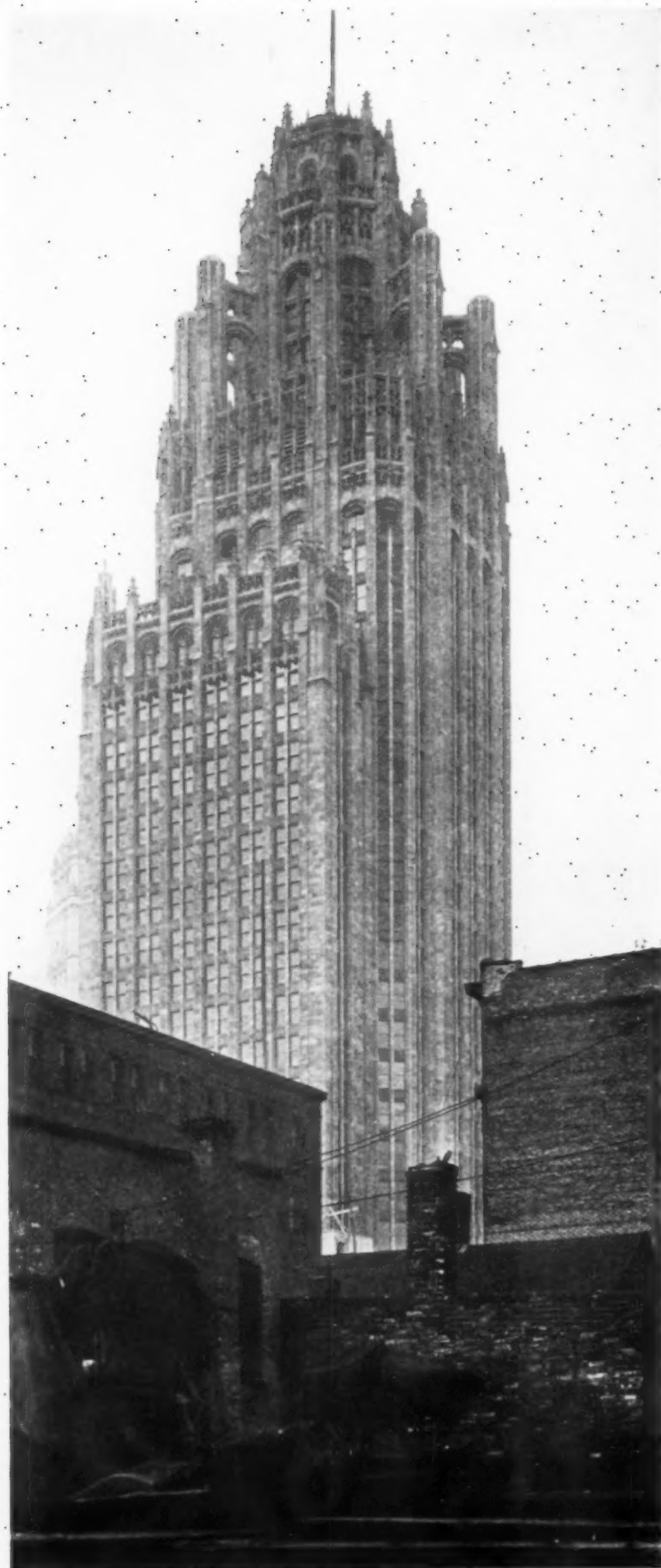
On the editorial page of *The Chicago Tribune* at the time the competition of the *Tribune Tower* was judged, there occurred this paragraph: "There is no precedent for this great contest, which has drawn upon the genius of the old world and the new. The competitive method is adopted in the case of public buildings with increasing frequency, but the new *Tribune* building will be the first privately owned edifice the design for which was awarded in a prize competition open to the world. There never has been such a contest, and it is very doubtful if there ever will be another. *The Tribune's* desire to erect the most beautiful and distinctive office building in the world, we believe, is now certain of fulfillment.

The response to the offer of *The Tribune* was worthy of the occasion. Only three designs receive prizes, but there are a dozen or more any one of which if erected would, in our opinion, easily surpass any office building in Chicago and compare favorably with the highest achievements in this field of architecture anywhere in the world.

"Thus the competition has achieved in a noteworthy way not only *The Tribune's* purpose to procure for itself the most beautiful and distinctive building, but its secondary object, to stimulate architectural genius and bring forth works of beauty. It is hoped all the highly meritorious designs which have failed of receiving prizes will appeal to individuals and corporations intending to build. At least a score are much above the average of the best modern office building and would be a credit to any city or street in the world. It is *The Tribune's* hope that these splendid designs will be realized, as many as possible, in Chicago. The designs, collectively speaking, are the most important expression of modern utilitarian architecture ever presented for analysis and comparison. They may be considered an encyclopedia of the architecture of the skyscraper. Genius, exceptional talent, experience, ingenuity, and inspiration have contributed richly, and we are confident that the influence of the competition will be widespread and lasting for the good of architecture.

"The greatest architectural contest of history will result not only in achievement of what *The Tribune* announced as its desire, the most beautiful and distinctive office building in the world, but it will produce many other beautiful buildings. It will give Chicago an architectural gem of the first water, and add permanently to the resources of the modern architect a mine of new ideas and suggestions. This was the hope of *The Tribune*, and it has been fully realized. Thus is defined *The Tribune's* point of view.

The competition for the great monumental office building conducted by *The Chicago Tribune* under the auspices of the American Institute of Architects was a unique event in the history of American architecture. It was the first time that any corporation, civic, commercial or political, has recognized the importance of a commercial building as a force for



An Unusual View of the Tribune Tower

beauty and inspiration in the daily life of the average American. It is one of the few occasions in modern times where an architectural undertaking of paramount importance was conceived and carried out by one man, to whom this magnificent piece of architecture will be a lasting monument, quite as much as to the great journal whose name the building bears. As in the days of the doges of Venice and the princes of both Church and State, to whose individual initiative, ambition and glory were due the greatest architectural monuments of mediæval and Renaissance Europe, so in these modern times the outstanding event of the completion of the *Tribune Tower* cannot be recorded without paying a word of tribute and respect to the unfailing enthusiasm and untiring efforts of Col. McCormick, who gave to the winning architects his hearty cooperation and inspiring enthusiasm. Seldom is it the great good fortune of modern architects to have back of them in a great architectural undertaking such understanding, sympathy and constant encouragement.

In submitting his report as Chairman of the Jury of Award, Alfred Granger thus well expressed the spirit which animated not only the program of the competition but its award as well: "The program of the competition repeatedly states that the main desire on the part of *The Tribune* is to create a building of surpassing beauty. Never before has the 'quality of beauty' been recognized as of commercial value by an American business corporation, and yet all the greatest architecture of the past has been based upon beauty as its fundamental essential. To the trained architect the quality of beauty in plan and in the design as expressing the plan has always been the goal to be striven for. Let us hope that the results of *The Tribune's* competition may impress this essential upon the mind of American business so emphatically that the whole aspect of our American cities may be permanently influenced thereby.

"One gratifying result of this world competition has been to establish the superiority of American design. Only one foreign design stands out as possessing surpassing merit, and this truly wonderful design did not come from France, Italy or England, the recognized centers of European culture, but from the little northern nation of Finland.

The two Finnish designs express a unity of composition, a grasping of the problem as a whole, which was not achieved by any of the other foreign competitors nor by any of the American designers, but this unity of composition and truthful expression of the plan have been qualities which have brought about the unanimous decision of the Jury.

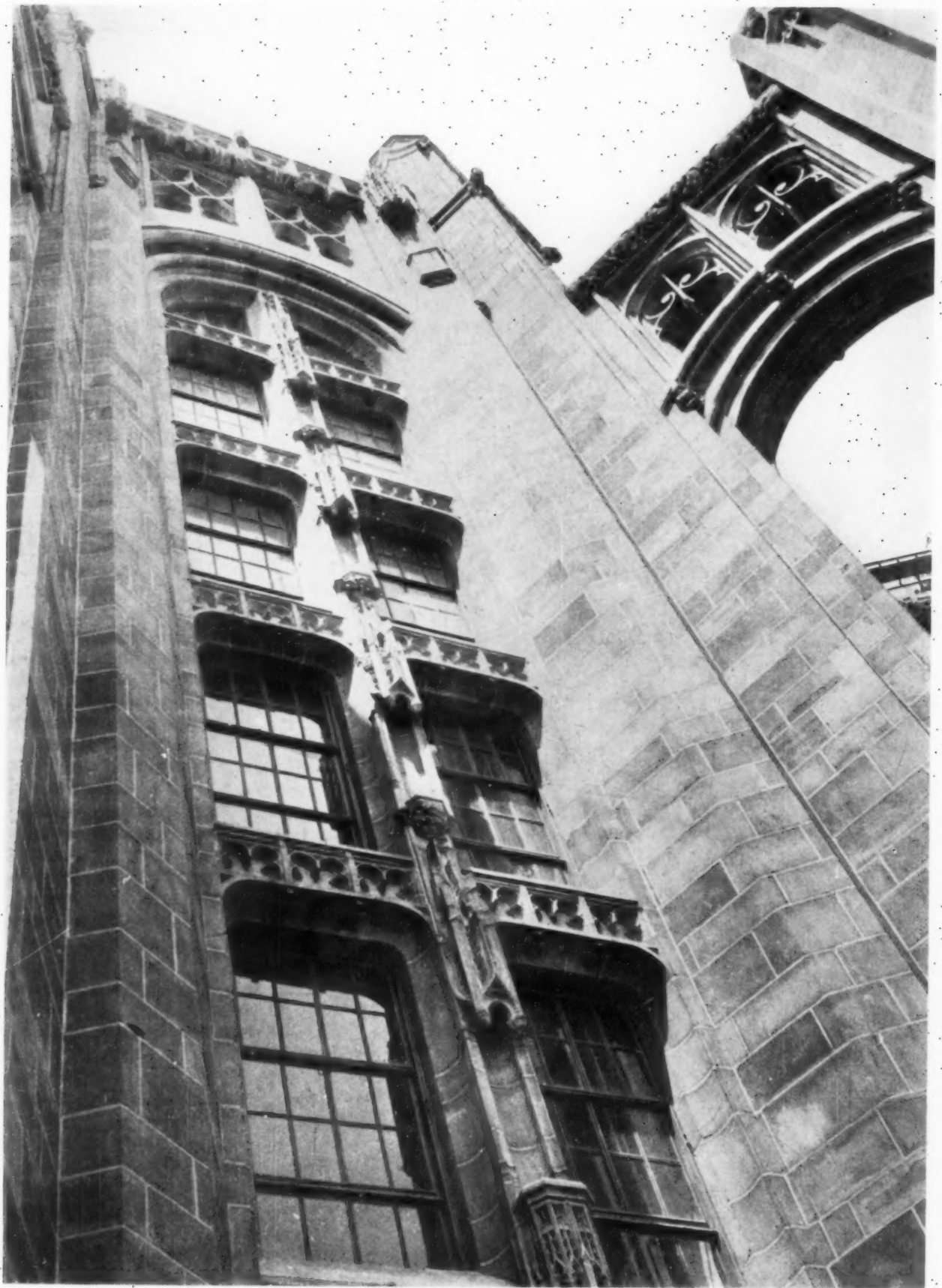
"When the winning design is executed, we feel that the judgment of the Jury will be more than justified and *The Tribune* amply compensated for what it has done to elevate commercial architecture into the realm of the fine arts and create for its own administrative headquarters the most beautiful office building in the world, a fitting monument to the founders of the pioneer newspaper of the great middle West"; all of which has come to pass.

In speaking of the design as submitted in the competition, the successful architects, Mr. Howells and Mr. Hood, gave this brief description: "The design is, before everything else, an expression of *The Tribune*. The structure is carried to its full height as a square on the Michigan Avenue front only, thus always giving the same impression from wherever seen, and showing the same from all points as the *Tribune* landmark. We feel that in this design we have produced a unit. It is not a tower or top, placed on a building; it is all one building. It climbs into the air naturally, carrying up its main structural lines, and binding them together with a high open parapet. Our disposition of the main structural piers on the exterior has been adopted to give the full utilization of the corner light in the offices, and the view up and down the Avenue.

"Our desire has been not so much to secure an archaeological expression of any particular style as to express in the exterior the essentially American problem of skyscraper construction, with its continued vertical lines and its inserted horizontals. It is only carrying forward to a final expression what many of us architects have tried already under more or less hampering conditions in various cities. We have wished to make this landmark the study of a beautiful and vigorous form,—not of an extraordinary form. The area of the cross section of the central motif of the top plus the area of its several supports is 3,360 square feet, and thus within the 3,600 square feet allowed, the frontage of the



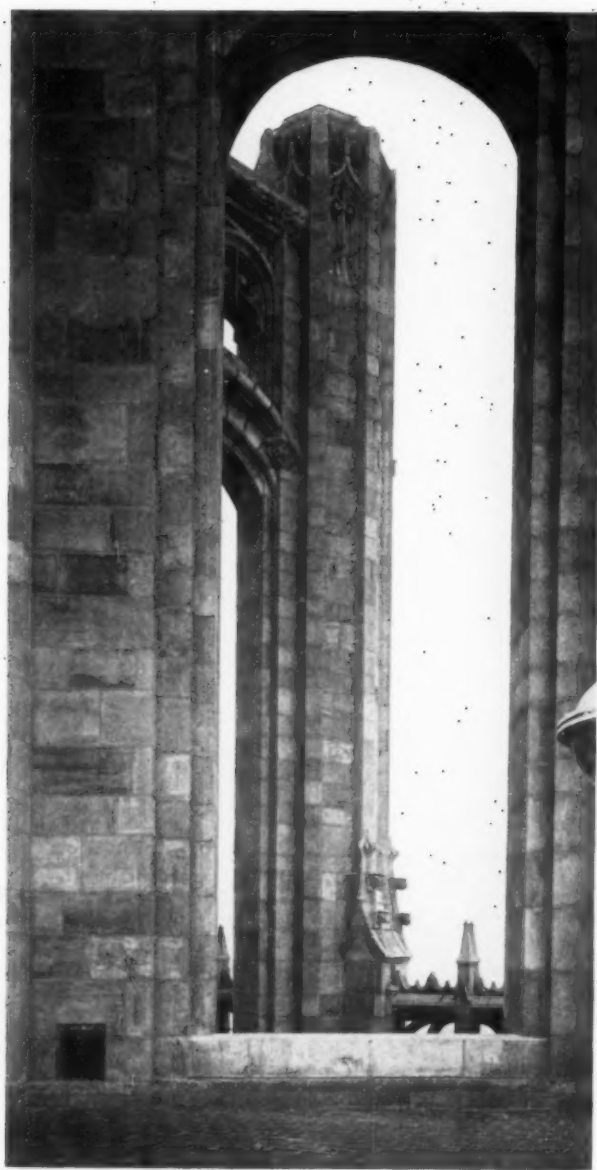
The Tower Rises Majestically Above the Chicago River



DETAIL, CENTRAL SHAFT ABOVE THE 25TH STORY
TRIBUNE TOWER, CHICAGO



DETAIL, DECORATIONS IMMEDIATELY ABOVE THE 25TH FLOOR
TRIBUNE TOWER, CHICAGO



Flying Buttresses Unite the Exterior Walls of the Main Building with the Center Finial of the Tower

top on the street being also within the building law.

"It is perhaps not necessary to call attention to the fact that the upper part of the building has been designed not only for its own outline and composition, but for the possibilities of night illumination."

The plainness of the walls of the first three stories makes it possible to introduce consistently the large show windows on the street level as well as the spacious openings of the second floor. The main entrance to the building is adequately emphasized by a great recessed opening, the carved ornamentation of which suggests the portal of some great cathedral. This great opening extends well up into the third story of the building. The use of two entrance doors instead of one or three is a characteristic of Gothic precedent, as is also the beautiful carved detail of the stone tracery screen which fills in the upper part of the arched opening above the doors. The broad carved band decorating the exterior of

this entrance archway suggests a type of detail popular in the Elizabethan period. In fact the character of all the Gothic detail used throughout the building suggests English inspiration. Over the entrance arch a series of richly carved niches with canopies above forms a continuous decorative note around the three street facades. From these decorations start the vertical piers which rise to the full height of the building. These piers have sufficient depth to create strong shadow lines, which emphasizes their vertical importance in the design. At the 24th floor arches terminate the divisions formed by these piers, above which, richly carved Gothic decorations form a sort of choir screen of such magnitude as to count as a fitting decoration for the top of the main part of the building. Much of the unusual beauty as well as simplicity of the *Tribune Tower* is attributable to the strong, unbroken lines of these piers, which divide each facade of the building into corner bays and wall bays. Each wall bay shows six windows to each floor. This same number of windows is shown again in the corner bays, which are semi-hexagonal in plan. This treatment of the corners, which gives a note of definite strength to the four corners of the main structure and makes possible the introduction of strong dividing vertical piers between the corner bays and the wall bays, is one of the many successful architectural features of the building. These piers above the 24th floor are carried up as the supports for colossal flying buttresses, which form one of the dominant decorative features of the architecture of the structure. These great buttresses, nearly 40 feet in height, apparently receive the thrust of the great center tower, with its rich Gothic detail in the form of tracery window openings, parapets, and richly ornamented turrets, capping the towering piers with superb architectural effect. The entire structure soars magnificently into space.

Such a descriptive analysis of the *Tribune Tower* as has here been attempted falls far short of giving any adequate impression of the unusual symmetry and beauty which it possesses. The masterful way in which scale and proportion are handled cannot be overlooked. The logical manner in which the rich Gothic decorations crowning the building are made an integral and structural part of the entire design is unsurpassed in architectural history. The height and mass of the great central octagonal tower with its eight flying buttresses are in perfect proportion as well as consistent and in unity with the lines and mass of the main shaft of the tower. The 20-story wing of the Tower building, directly back of it, gives additional strength to the main structure.

Illustrations of the *Tribune Tower* merely suggest the sense of beauty and architectural perfection which the building itself inspires. To be fully appreciated it must be seen. Chicago is indeed fortunate in witnessing the realization and successful completion of this great architectural undertaking, the prime motive for which was the enhancement of civic beauty and the securing for Chicago the most beautiful office building genius could conceive.

Kansas City Life Insurance Company Building

WIGHT & WIGHT, Architects

A STRONG indication of the steady progress in architectural taste is to be found in the fact that throughout the country large organizations which serve the general public, such as banks, railroads, newspapers and insurance companies, are constructing for their own use buildings which are real monuments of beauty, buildings in which the opportunity is given the architect to "waste" space in order to achieve the scale necessary to secure a truly monumental character. Whereas a few years ago a "monumental" structure was almost surely a public building, serving the municipality or state, and the architect was restricted to these publicly owned buildings or to an occasional mauso-

leum for his expression of the purely classical, today the field has been broadened to afford greater scope.

The new building for the Kansas City Life Insurance Company, recently completed from the designs of Wight & Wight, is an example of an almost prodigal use of resources to create a dignified and impressive setting for the home offices of a large organization. There are certain considerations in the actual workings of an insurance company which make possible the design of a classic building. In the first place, it has been determined that it is more convenient in the case of such offices to have the working space as far as possible on single floor areas, so that the natural tendency is to erect a



Classic Scale and Refinement of Detail Give Dignity to the Elevation

building which is low and spreading rather than the typical tall, compact office building. Accordingly, there is the architectural possibility of using classic motifs in their entirety rather than merely for the base and cap of a shaft which is purely modern, and which can have very little relation to its complementary members. Here the architects have taken advantage of this opportunity to use the Greek Doric order, and have produced a balanced composition of great dignity. The order has been placed on a high rusticated stylobate, which encloses the first story; between the columns the upper floors are marked by bronze spandrels. The doors are also of bronze, backed up with glass. With the exception of this work, the entire exterior is of limestone.

In addition to the possibility of using a comparatively low building, the business of an insurance company's office, where no provision is to be made for public renting space, also permits the placing of the building outside the usual business district, in this way obtaining a setting which would be impossible in the crowded downtown district of a city. In this instance the owners acquired a large plot in a residential district, a plot so large that the building has a proper setting on all sides, as well as ample space between the building and the street to make possible an impressive flight of steps for the main entrance. Such a piece of property provides ample space for additions as they may become necessary.

The main entrance leads through a generous hall

or lobby directly into the public space, and on either side by corridors to reception rooms, and by elevators to the private offices of the various officials on the floors above. The public space or lobby has been treated in the generous and monumental manner of our more recent banks, being carried not only through the first and second floors, but including a clerestory which gives ample light to this portion.

The second floor is devoted entirely to the use of the medical department, while the two upper floors provide office space for the other departments, including the directors' room and the president's office, both of which are elaborately finished with paneled walls and coffered ceilings. The basement, in addition to providing for the usual mechanical equipment, gives additional space for storage and filing vaults. Two entrances for employees have been placed on either side and, at the rear of the building, and the stairs at these entrances also give inter-communication between the departments on the upper floors.

It is well that great financial organizations such as this are realizing the real value of a beautiful architectural setting for their activities. One can readily appreciate the interest that must be aroused on the part of the public when it sees this distinctive building with its pure classic beauty, unusually well placed on spacious grounds. And, further, upon entering the building, the solid dignity of the public portion, with its impressive size, must surely be taken as an indication of the character of the company.



Broad Steps Flanked by Monumental Lions Provide a Formal Approach.

Prize Winning Drawings of the Ideal Cellar Competition

ON these pages will be found a list of the architectural designers whose drawings, entered in the Ideal Cellar Competition, were awarded prizes and honorable mentions. The eight prize-winning drawings are shown, together with plans, and the report of the jury is given.

The Ideal Cellar Competition, conducted by THE ARCHITECTURAL FORUM for the American Radiator Company, marked the first step in establishing in the home building field a realization of a new economic factor of importance to home builders, real estate developers, and architects. When the competition announcement was sent out, it was said that its purpose was to place before the architectural profession the possibilities of cellar planning and design, which might result in suggestions indicating practical ways of arranging cellar space to secure increased efficiency and capital valuation for this heretofore neglected part of a residence. Every architect and home builder realizes that in estimating the cost of a new dwelling, the cubic foot measurement is applied to the entire cellar with a structural cost factor equal to that of any other part of the building. Thus the owner's investment in the cellar is proportionately equal to that in the principal rooms, but the

return upon that investment, in realty valuation, in rental valuation, and in living comfort is entirely disproportionate,—small because a fixed habit, due to conditions of the past, overlooks the possibilities of developing the cellar in full measure as useful or livable space. The solutions of this problem, as obtained from the architectural profession in the form of competition drawings, are extremely interesting and show a broad scope of imagination in attacking a problem of a new nature, not wanting in suggestion.

These five well known architects were chosen by THE ARCHITECTURAL FORUM to act as a jury:

C. HOWARD CRANE, Detroit.

RAYMOND M. HOOD, New York.

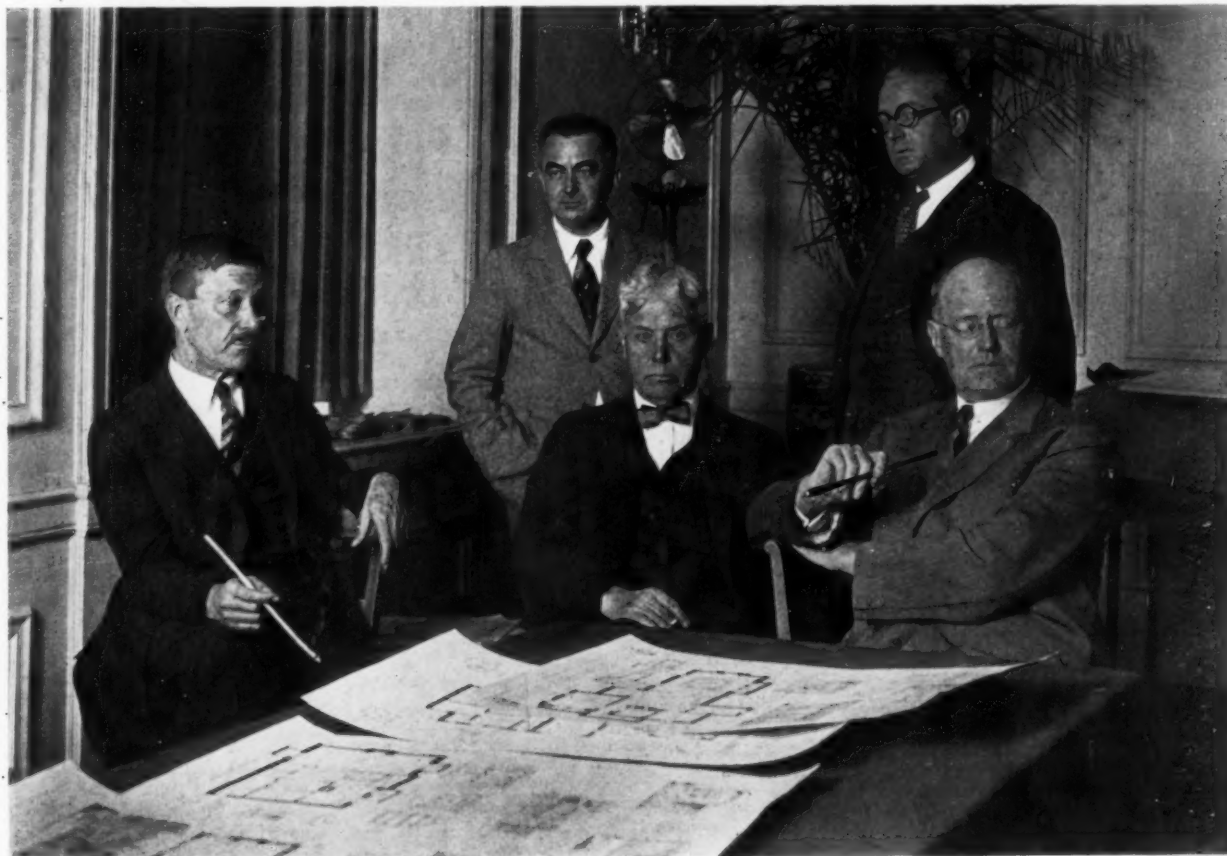
HORACE B. MANN, New York.

PHILIP RICHARDSON, Boston.

ERNEST J. RUSSELL, St. Louis.

On Thursday, September 17, this jury met at the Westchester-Biltmore Country Club and spent the day in a careful examination of all drawings, awarding the sum of \$4,200 in 29 prizes and mentions as listed on another page. This report of the jury's findings was written by Mr. Mann for THE FORUM:

"The problem which faced the jury in judging the drawings submitted in the Ideal Cellar Competition



Awarding Prizes in the Ideal Cellar Competition

The members of the jury were (standing, left to right) Raymond M. Hood, New York; C. Howard Crane, Detroit; (sitting, left to right) Philip Richardson, Boston; Ernest J. Russell, St. Louis; Horace B. Mann, New York

was somewhat complex in its nature, first, because of the unusual nature of the competition, for which no precedent had ever been established, and, second, because of the peculiar combination of practical and aesthetic requirements. The first general impression when the drawings were placed before the jury was that most of the plans were arranged to provide usable space without detracting from the utilitarian uses necessary in every cellar; in fact, that in most of the plans the practical efficiency of the cellar was increased, while a careful interrelationship of the various rooms provided space and operating economy in this too often unstudied portion of a house.

"The attitude of the jury itself toward this idea of encouraging the better planning of residential cellars was highly favorable, and it was felt that this competition possessed an interesting economic significance in that it might logically prove the beginning of a movement throughout the home building field toward a better understanding of the increased value of houses, in the planning of which more attention is given to utilizing the cellar.

"Class A of this competition represented cellars planned for houses located on level ground, and all of the prize plans of this class as shown in these pages are covered by this description.

"The First Prize drawing in Class A, by Chester Eugene Dean, of Kansas City, showed in the first place a desirable simplicity from a structural point of view, avoiding complicated parts in relation to the structure above the cellar. It also showed a fertility of imagination in making use of the thick walls and high windows of the cellar. Advantage was taken of the natural features of the interior construction of the cellar with comparatively little embellishment. The heating apparatus indicated was for either oil or coal.

"The Second Prize in Class A was awarded to William F. Kussin and Thomas F. McDonough of Boston, and again represented good planning and practicability and showed use of fertile imagination. The extreme simplicity of the plan, together with the position given to the heating apparatus, seemed to solve this problem in an excellent manner. The type, selected for the principal room and its interior treatment was thoroughly practical and not overdone in decoration. Each part of the cellar plan is well related to the others. Here no effort was made to conceal the heating plant, but it was located in a convenient position, and the interior treatment was developed with the heat machine as an important and yet unobjectionable part of the design.

"The Third Prize in Class A was awarded to Hiram A. Salisbury, of Omaha. While being less pretentious than the other two, it established a very interesting use for the principal room. The arrangements for hot water, ash disposal, storage of fireplace wood and other similar practical features were handled in an unusually successful manner.

"The Fourth Prize in Class A was awarded to H. E. Willmot, of Detroit. This plan was arranged in a practical manner and brought out some interesting ideas in the interior treatment of these rooms, as shown by the detail of fireplace and inglenook. The design was unique in showing an open terrace, level with the cellar.

"Class B involves the planning of a cellar located in a house on sloping ground, and offers most interesting possibilities from the designer's point of view, as this gives an opportunity to incorporate the cellar as a component in the exterior treatment and also to make use of entrance doors, windows, terraces and other features which would not be possible under Class A requirements.

"The First Prize in Class B was awarded to F. Pendlebury of New York, and again the award was based on its practicability from a structural point of view and on the simplicity of the cellar arrangement and interior treatment.

"The Second Prize in Class B was awarded to William F. Kussin and Thomas F. McDonough, of Boston, and indicates a very unusual and interesting arrangement of the main living room, two stories high and utilizing ordinarily

wasted cellar space, as a definite part of the house plan itself. A study of the plan will show the entrance on a balcony, with steps leading down into the living room, and with the heater occupying a very prominent position in connection with this main room and yet treated in an attractive manner.

"The drawing which was awarded Third Prize in Class B, submitted by Anthony Wuchterl of Milwaukee, was charmingly presented in simple but effective rendering and indicated a thoroughly practical layout from structural and utility points of view. This plan is less pretentious than many submitted in this competition, but it provides a definite element of attractiveness to a part of the house usually overlooked in planning.

Grand Prize, \$1,000

William F. Kussin, Thomas F. McDonough, 11 Beacon St., Boston.

Class A

First Prize, \$500, to Chester Eugene Dean, 417-16 Reliance Bldg., Kansas City.

Second Prize, \$300, William F. Kussin, Thomas F. McDonough, 11 Beacon St., Boston.

Third Prize, \$200, Hiram A. Salisbury, 1037 Omaha Natl. Bank Bldg., Omaha.

Fourth Prize, \$100, H. E. Willmot, Architects Bldg., 415 Brainard St., Detroit.

Mentions (\$50 Each)

Alfred Kastner, Harry Bosworth, 2 W. 47th St., New York.

Bennett J. Applegate, 6620 Clemens Ave.; Arthur S. Martsoff, 7064 Clayton Road, St. Louis.

Paul S. Hodgson, 504 Eccles Bldg., Ogden, Utah.

Chas. H. Bruegger, 5426 Murdock St., St. Louis, Mo.

John C. French, Jr., 81 Edge Hill Road, East Braintree, Mass.

Frank Eugene Doff, 282 Ryerson St., Brooklyn.

Emile Monier, 16 Webb Ave., River Edge, N. J.

Arthur R. Carpenter, P. O. Box 527, Chehalis, Wash.

Frederick J. Griffin, 301 Montclair Ave., Newark.

T. P. Logergren, 64 W. Randolph St., Chicago.

Class B

First Prize, \$500, F. Pendlebury, care of McKim, Mead & White, 401 Park Ave., New York.

Second Prize, \$300, William F. Kussin, Thomas F. McDonough, 11 Beacon St., Boston.

Third Prize, \$200, Anthony Wuchterl, 304 Colby Abbot Bldg., Milwaukee.

Fourth Prize, \$100, Alfred Kastner, Harry Bosworth, 2 W. 47th St., New York.

Mentions (\$50 Each)

Arthur L. Martsoff, 7064 Clayton Road; Bennet J. Applegate, 6620 Clemens Ave., St. Louis.

Edgar W. Buerger, Edwin Larson, 692 Endicott Bldg., St. Paul.

Edward J. Thole, 707 Furniture Bldg., Evansville, Ind.

John Blair Muller, 254 Park Ave., New York.

Paul Hermann, 4610 Magnolia Ave., Chicago.

Emile Monier, 16 Webb Ave., River Edge, N. J.

Fred'k J. Griffin, 301 Montclair Ave., Newark.

E. Walker Burkhardt, 1000 President St., Brooklyn.

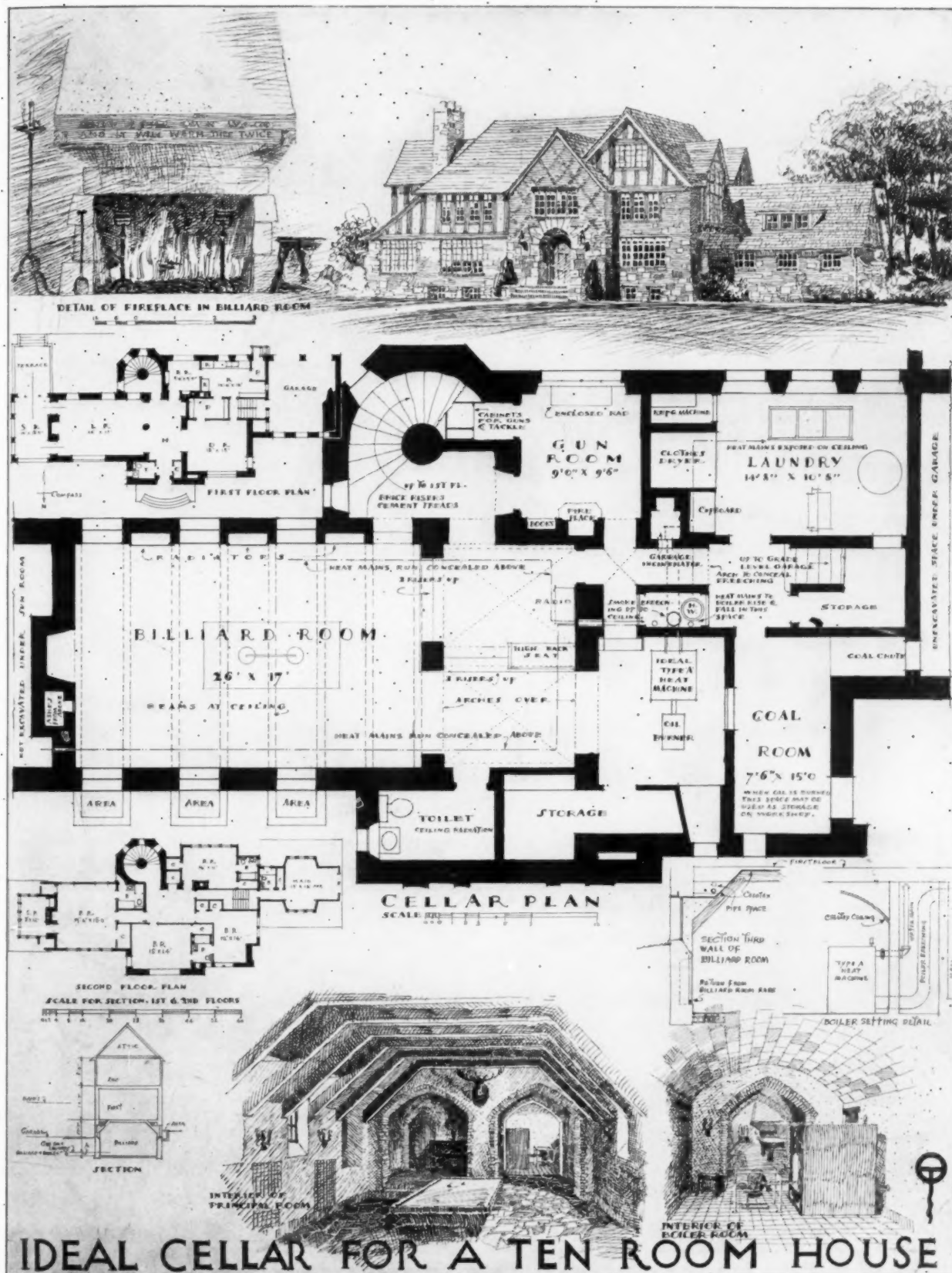
Max Tuller, 1205 Santa Clara Ave., Alameda, Cal.

H. S. Gams, 1216-17 Fletcher Trust Bldg., Indianapolis.

"The interesting feature of the drawing by Alfred Kastner and Harry Bosworth, of New York, which was awarded Fourth Prize in Class B, was the successful segregation of the living and utility sections of the cellar. Access is provided to a large 'den,' either through a stair hall within the building or through an outside porch. The whole plan represents an interesting solution of the problem presented by a hillside dwelling, taking full advantage of conditions.

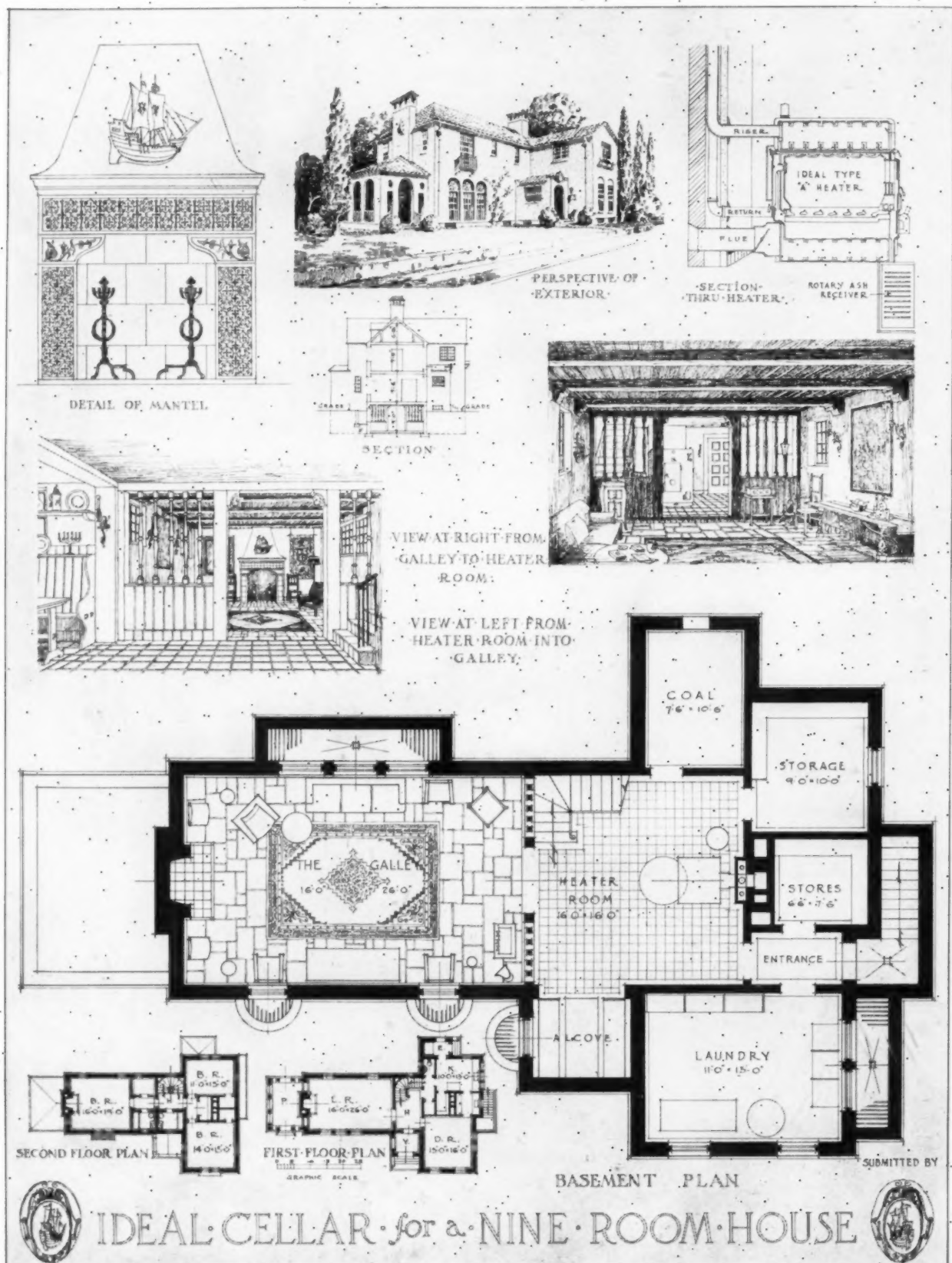
"The awarding of the Grand Prize to William F. Kussin and Thomas F. McDonough was comparatively simple, because the drawings entered by these designers had been awarded second prizes in both Classes A and B. Thus the selection became automatic, since the total number of points for them was considerably higher than that of any other competitor for the Grand Prize of the competition.

"The prize-winning drawings were considered by the jury to be well presented and thoroughly practical, offering many suggestions and solutions of cellar problems for those interested in replanning existing cellar spaces or in the designing of new dwellings. An interesting feature was the wide variety of suggestions for useful rooms in the cellar."

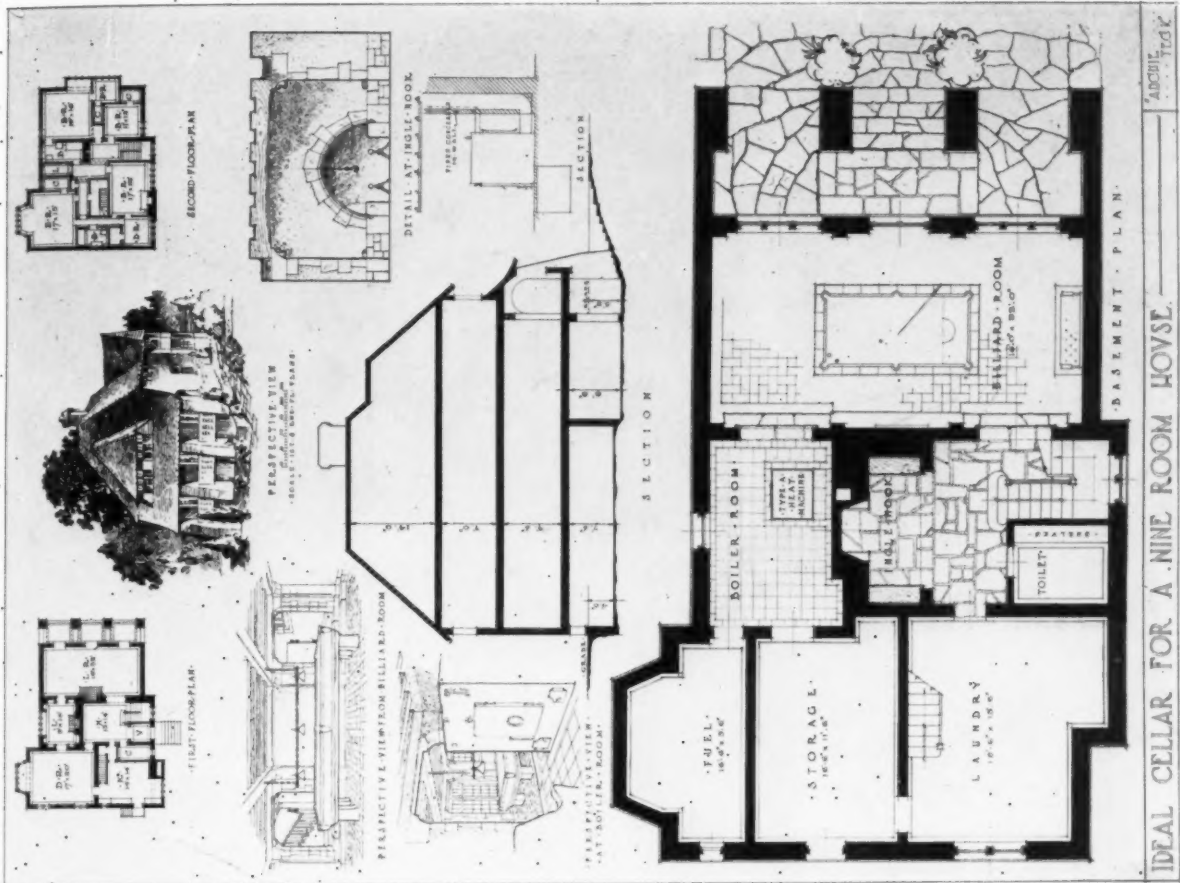


First Prize Design, Class A

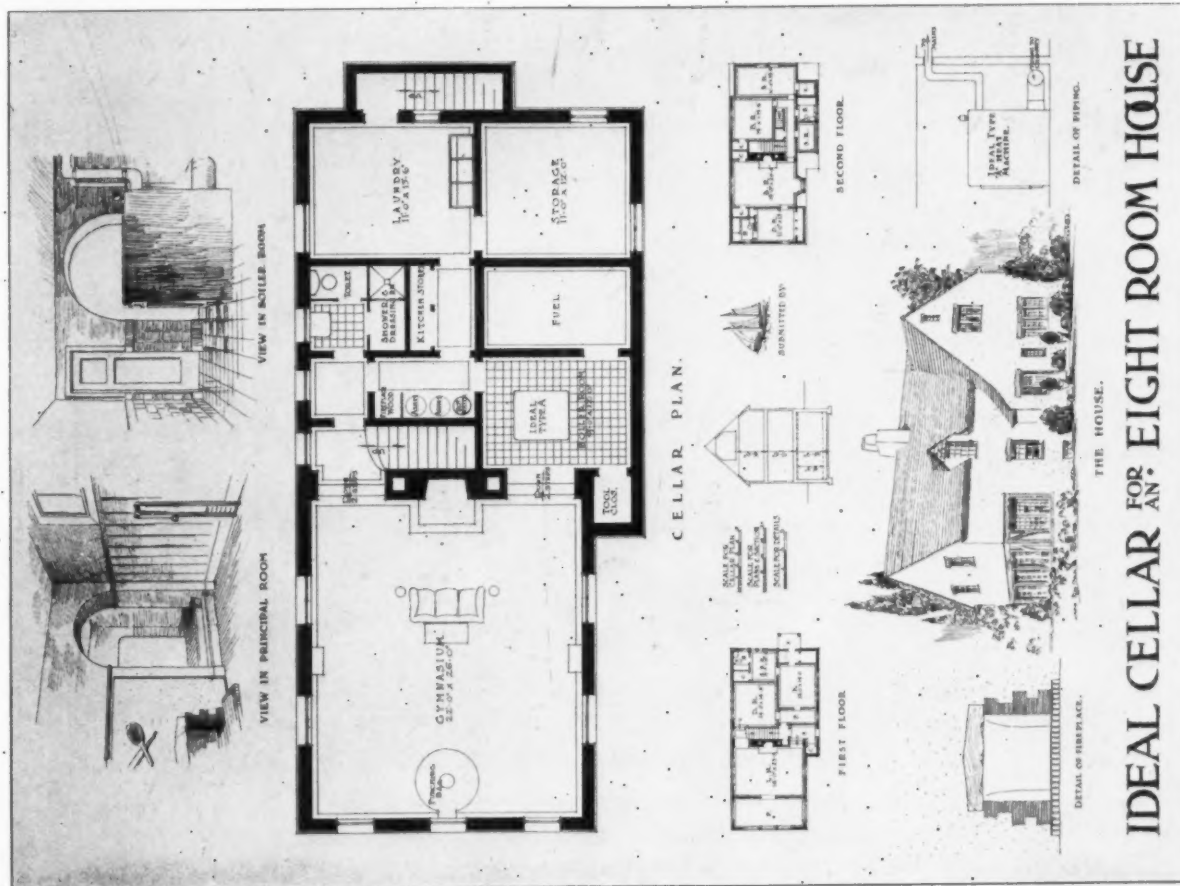
Submitted by Chester Eugene Dean, Kansas City



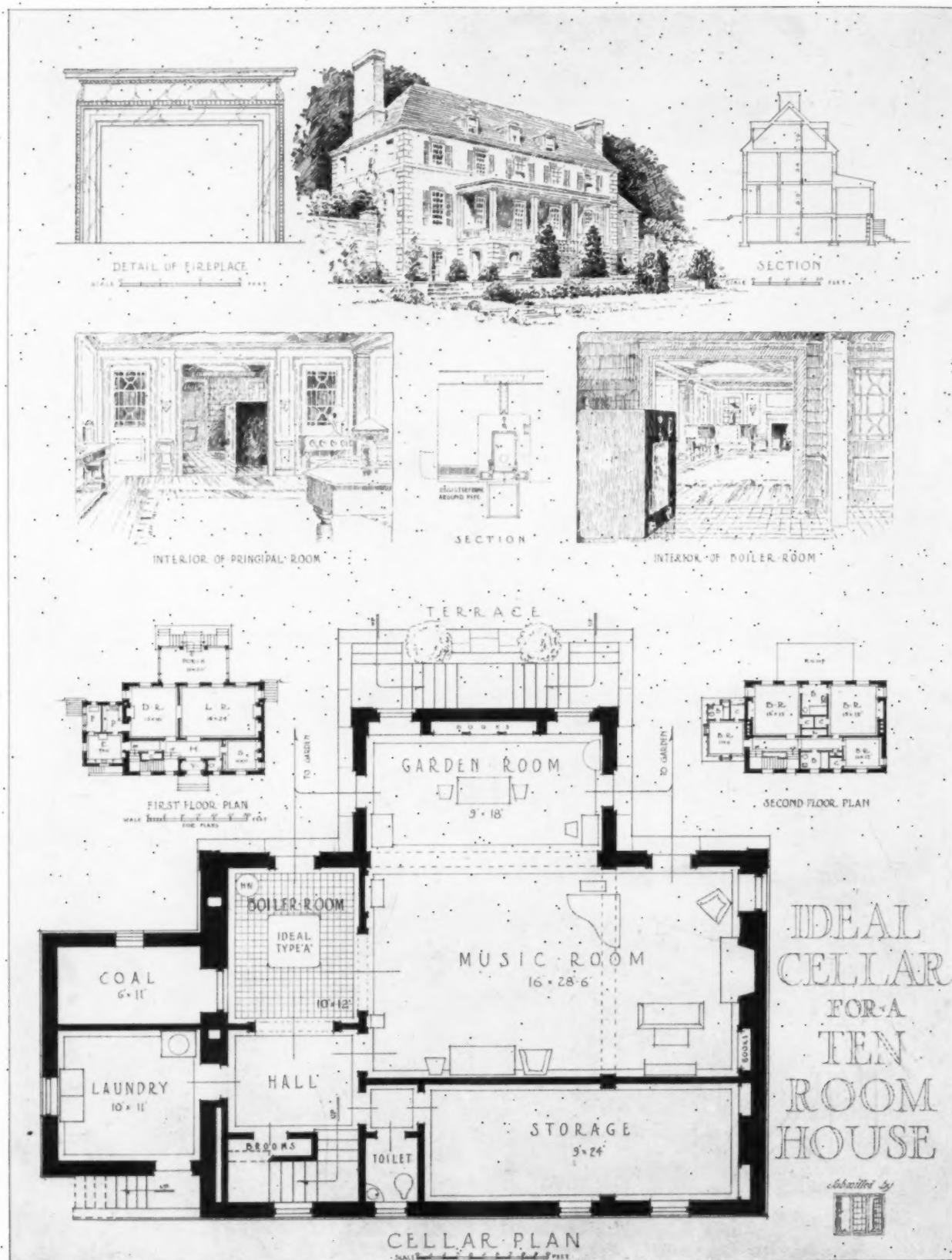
Grand Prize and Second Prize Design, Class A.
Submitted by William F. Kussin and Thomas F. McDonough, Boston



Fourth Prize Design, Class A
Submitted by H. E. Wilmot, Detroit



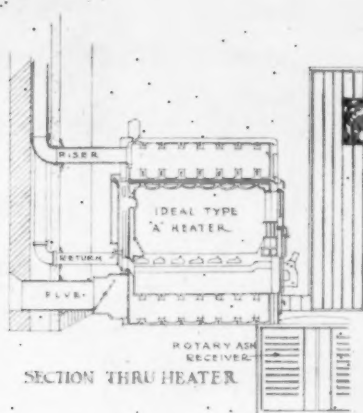
Third Prize Design, Class A
Submitted by Hiram A. Salisbury, Omaha



First Prize Design, Class B
Submitted by F. Pendlebury, New York



LOOKING FROM LIVING ROOM
TOWARDS HEATER



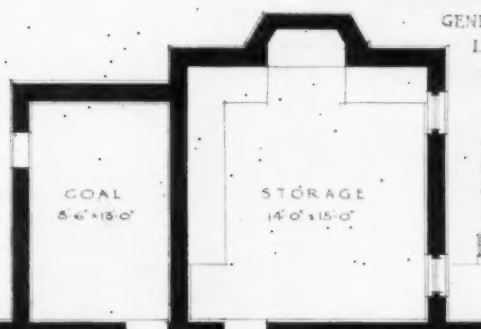
SECTION THRU HEATER



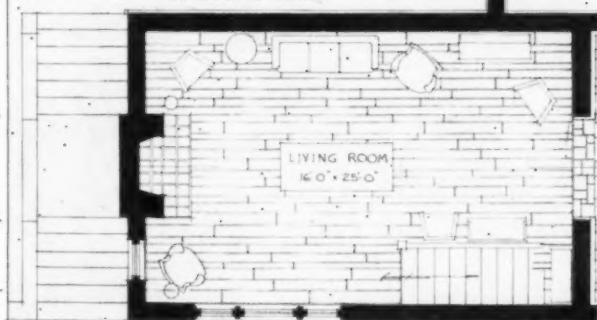
GENERAL VIEW OF
LIVING ROOM



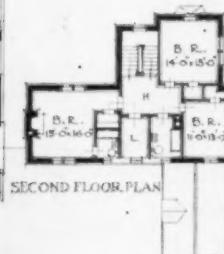
DETAIL OF
BALCONY RAIL



SECTION



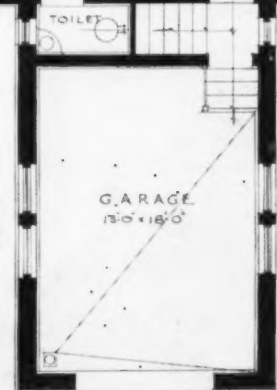
BASEMENT PLAN



SECOND FLOOR PLAN



PERSPECTIVE OF EXTERIOR



GARAGE
15'0" x 18'0"

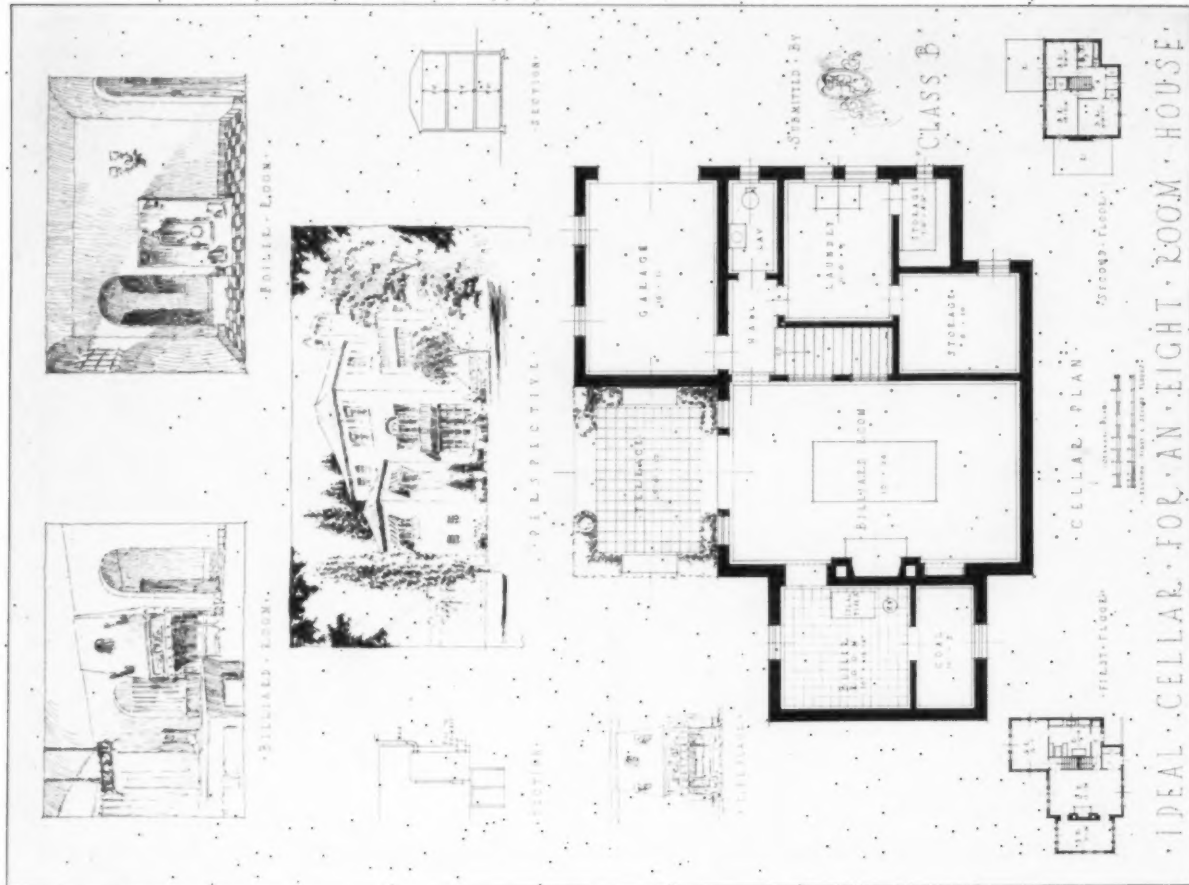


FIRST FLOOR PLAN

IDEAL CELLAR for an EIGHT ROOM HOUSE

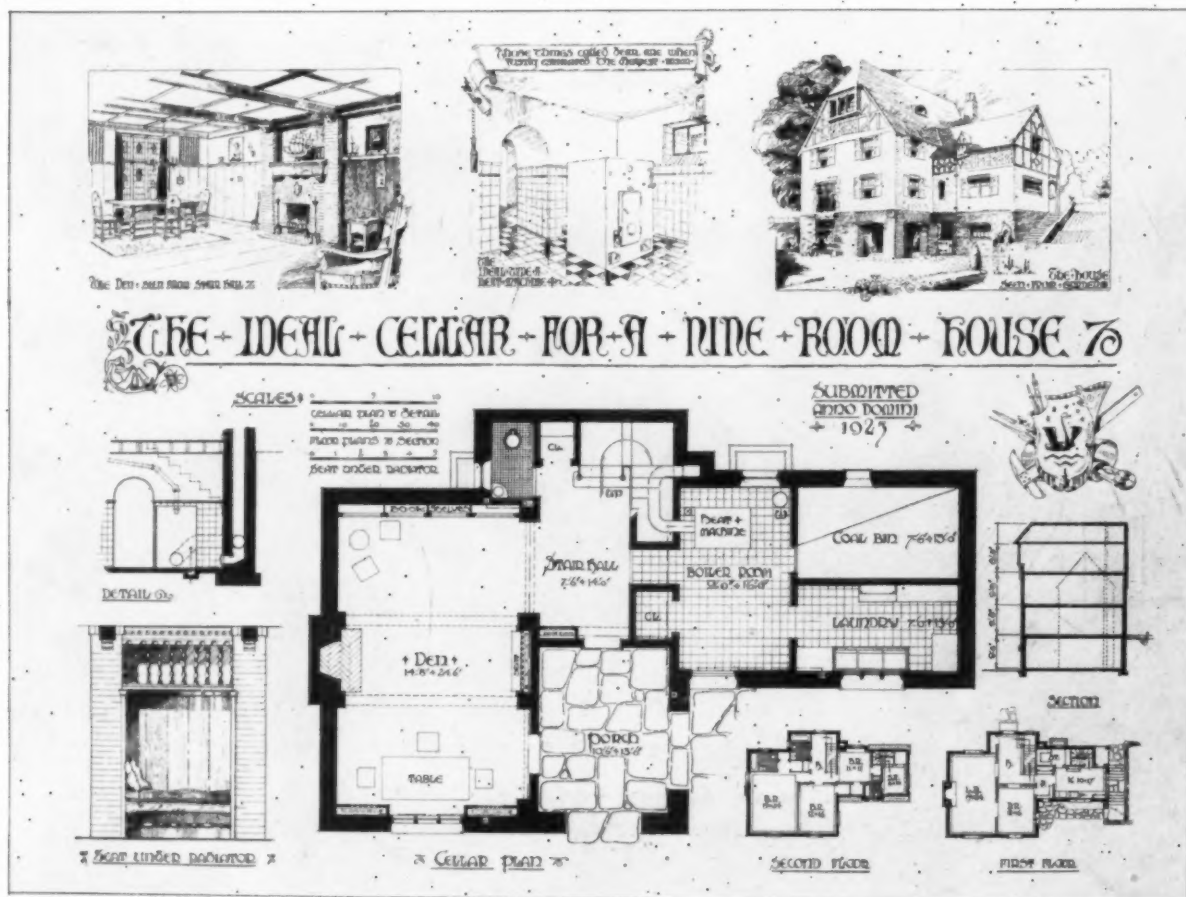
Grand Prize and Second Prize Design, Class B

Submitted by William F. Kussin and Thomas F. McDonough, Boston



Third Prize Design, Class B

Submitted by Anthony Wuchterl, Milwaukee



Fourth Prize Design, Class B

Submitted by Alfred Kastner and Harry Bosworth, New York

The California Palace of the Legion of Honor, San Francisco

GEORGE A. APPLEGARTH, Architect
By LEIGH FRENCH, JR.

IN the name and purpose of the Palace of the Legion of Honor at San Francisco are suggested the ideas which both enhance and detract from the value of this monument as a work of architecture. In view of its importance and the great interest which has attached to its erection, as well as because of the very great influence which its design may have along the Pacific coast, it is only fair to analyze carefully the finished whole, and to describe those features about it which are worthy of praise.

The great difficulty in designing such a building as this lies in the fact that two diametrically opposed ideas supply the basic elements in the problem. The harmonizing of these two ideas is a well-nigh impossible feat. These two warring ideas are, first, the requirement that the building itself shall be a monument,—practically a copy of an old building whose historical character it is desired to suggest in its replica; and, second, the necessity that in plan and arrangement it shall fulfill the functions of a modern museum, two requirements difficult to harmonize.

Let us examine these two elements and discover their essential requirements. We can then judge just how successfully the two may be combined. A monument, commemorating in some degree the Great War, and recalling in some respect the historic past, is to be built. For this purpose it has been decided to reproduce very closely a well known building whose association with Napoleon and the order of the *Legion d'Honneur* of France is of long standing. Putting aside any question of how appropriate this particular historic connection is in the present instance, from the architectural aspect there is some

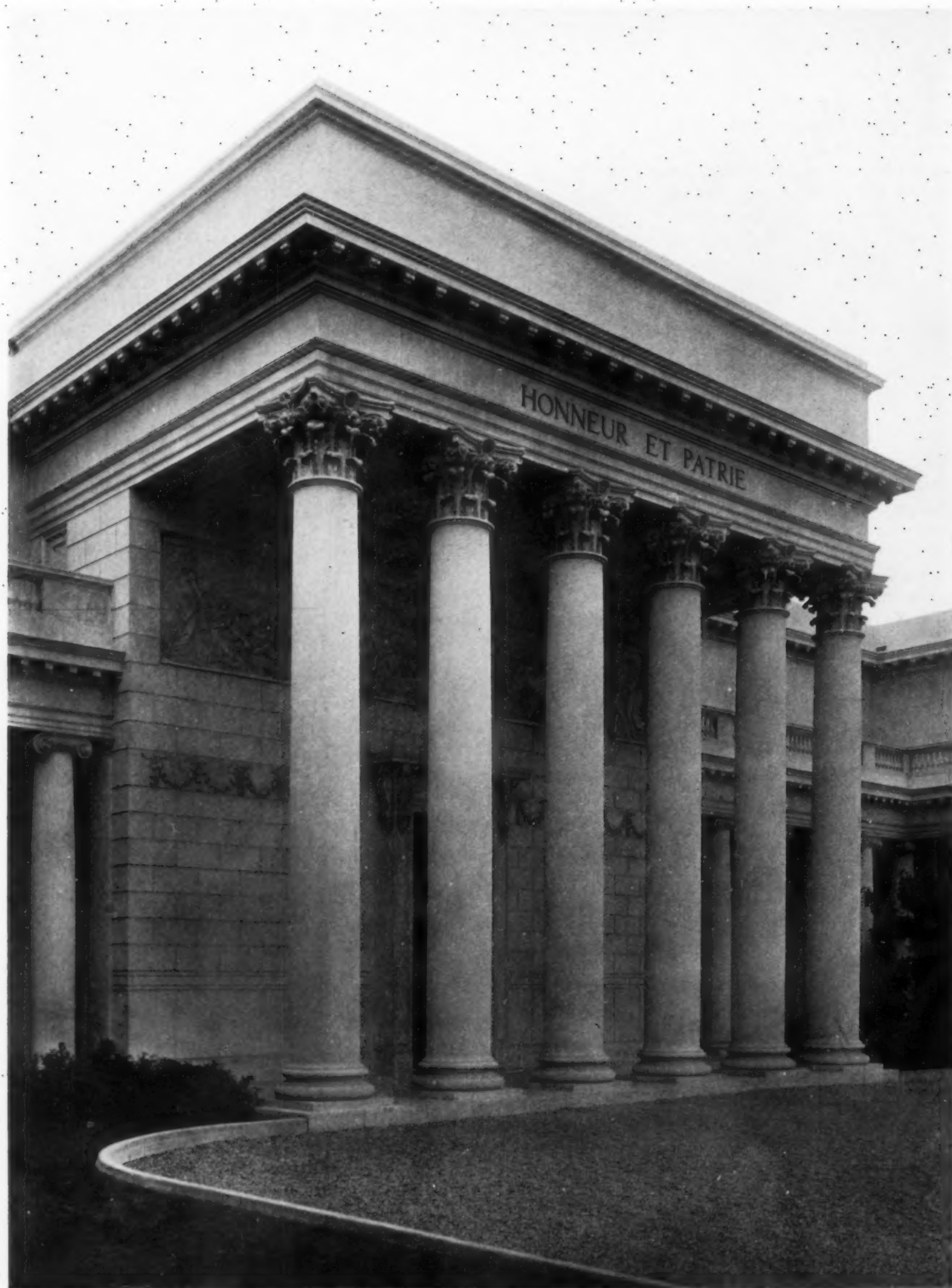
doubt as to the advisability and fitness of reproducing an ancient work as a contemporary monument.

The *Palais de la Legion d'Honneur*, on the *Quai D'Orsay*, built toward the end of the eighteenth century as the private house of a rich noble, is a city building, built upon a restricted property. Its arrangement permits of viewing it only from certain angles, and it is not studied as a mass to be seen from all sides. The social uses of the rooms, as well as the architectural and sculptural treatment which influenced its design and erection, were those of monarchical Paris toward the end of the reign of Louis XVI. The building is of cut stone, and the ornamental sculpture is from the facile chisels of the consummate artists of the eighteenth and the nineteenth centuries. So much, then, for the original building, not built as a monument but as a private dwelling for a rich aristocrat, suited to its city location and the climate of Paris, a gem of high quality in the fineness of its materials and the beauty of its ornament. It is thoroughly and essentially Parisian.

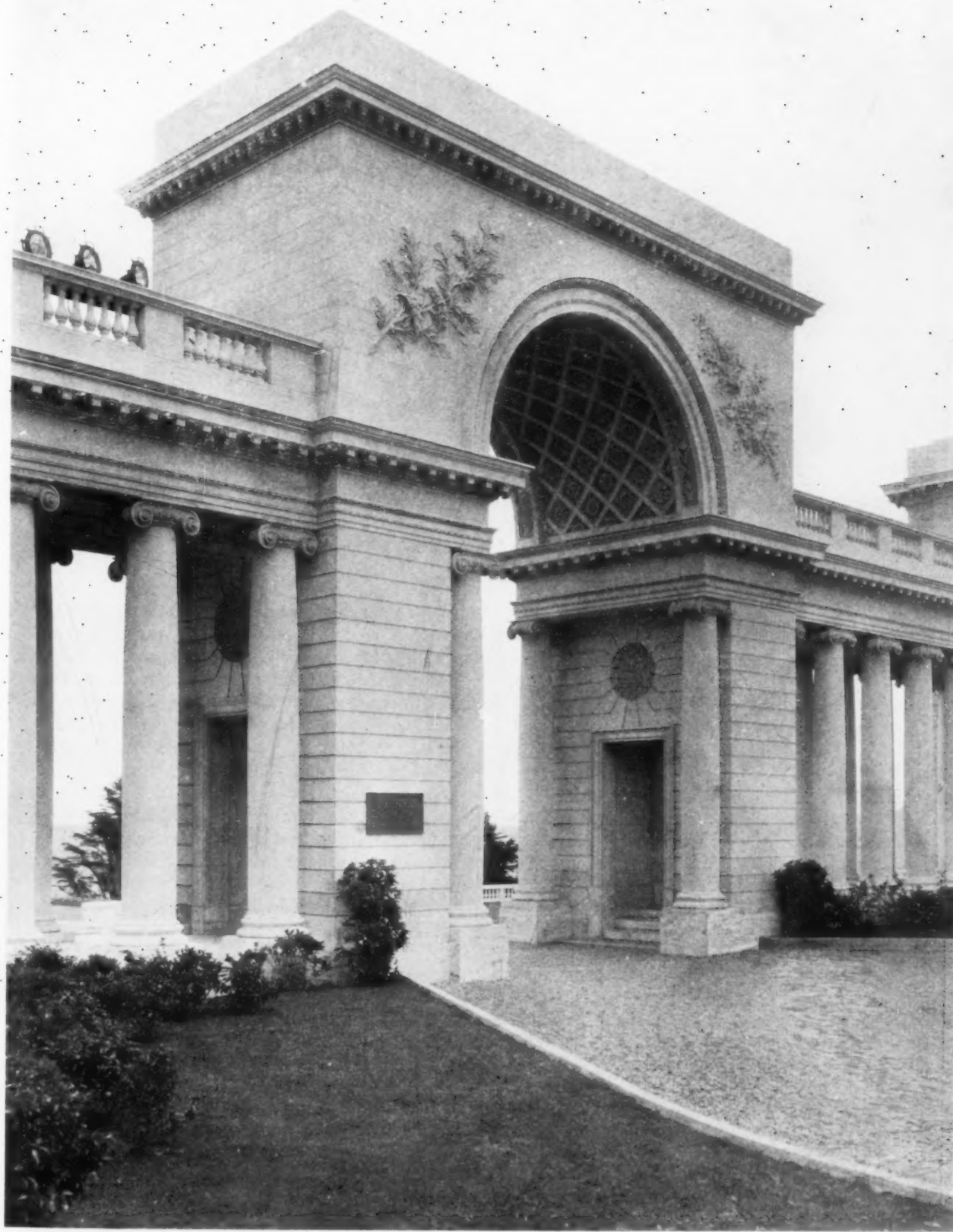
Of the ideas which underlie the planning of the modern museum, the most important is that the building itself shall preserve as simple a character as is consistent with dignity, and also that it shall constitute a fairly neutral background for the display of the works of art which it contains. The planning of such a building must be flexible and free, unhampered by limitations for the fullest development of the interrelation of parts and the circulation between these parts. Certain definite schemes have been perfected in the arrangement of the modern museum,—such as the use of secondary circula-



The California Palace of the Legion of Honor, San Francisco



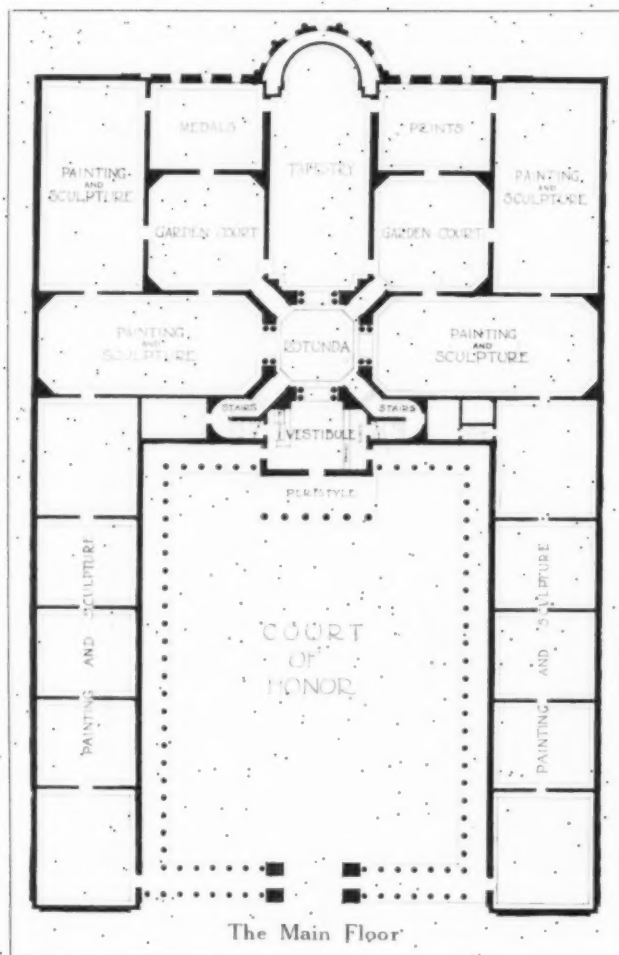
DETAIL, ENTRANCE PORTICO
CALIFORNIA PALACE OF THE LEGION OF HONOR, SAN FRANCISCO
GEORGE A. APPLÉGARTH, ARCHITECT



ARCHWAY LEADING INTO ENTRANCE COURT
CALIFORNIA PALACE OF THE LEGION OF HONOR, SAN FRANCISCO
GEORGE A. APPLGARTH, ARCHITECT



One of the Two Interior Garden Courts

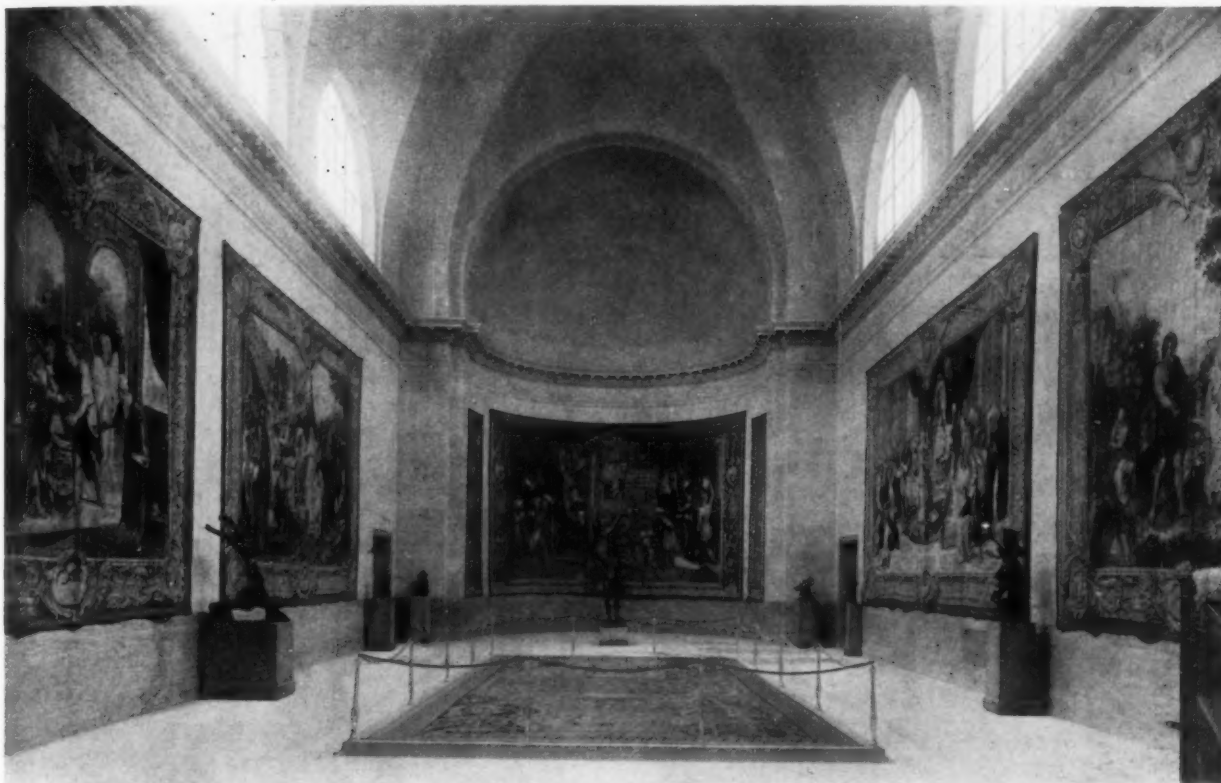


tion, so that any gallery may be shut off without closing adjacent rooms, compactness of plan to avoid as much as possible the fatigue of long walks and the unnecessary retracing of steps through the same galleries. Of primary importance is the necessity for a convenient circuit of the galleries in the handling of large crowds and for the benefit of visitors, who must be saved unnecessary steps.

Here, then, are the two fundamental requirements in the problem which faced the architect of the Palace of the Legion of Honor: to create, exteriorly, a monument following closely an old original (which in itself was not a monument), and to adapt this monument to the practical needs of a modern museum. To discern how successfully this problem has been met, we must examine the new building, first as a monument and secondly as a museum, and form an idea of its value as both.

As we have said already, the original building was designed to occupy a restricted city property. Its mass was not studied in the round, but as a series of elevations, not viewed together from a distance. For this reason, the present building had to be carefully studied to make it appropriate to its setting, which is the highest point in Lincoln Park, overlooking the ocean and the Golden Gate. From certain angles the great blank walls of the extending wings form an unpleasant contrast to the heavily columned screen set between the pavilions.

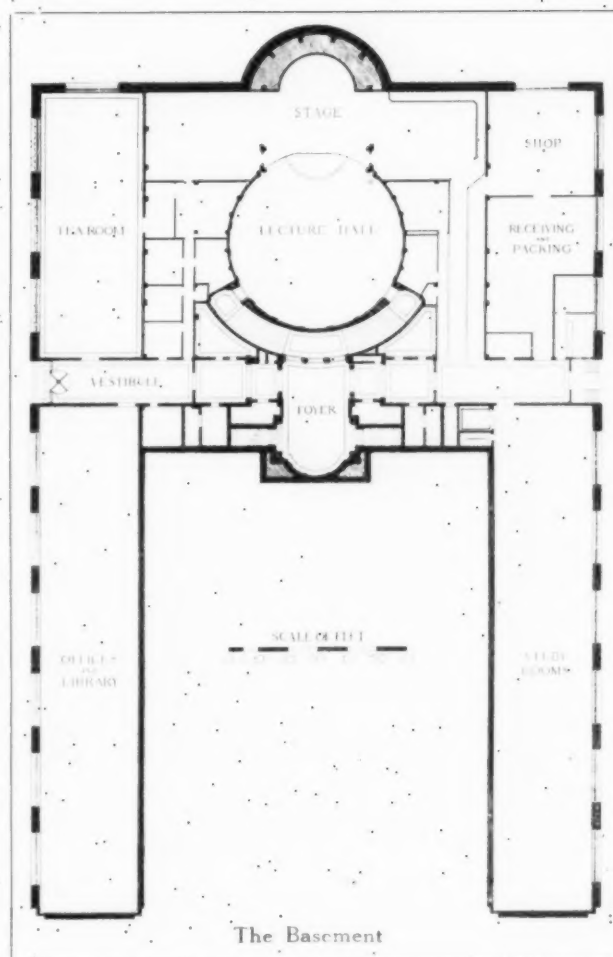
The original building of stone was intrinsically fine; the present structure is unfortunately of imitation Caen stone. In actual design, the replica

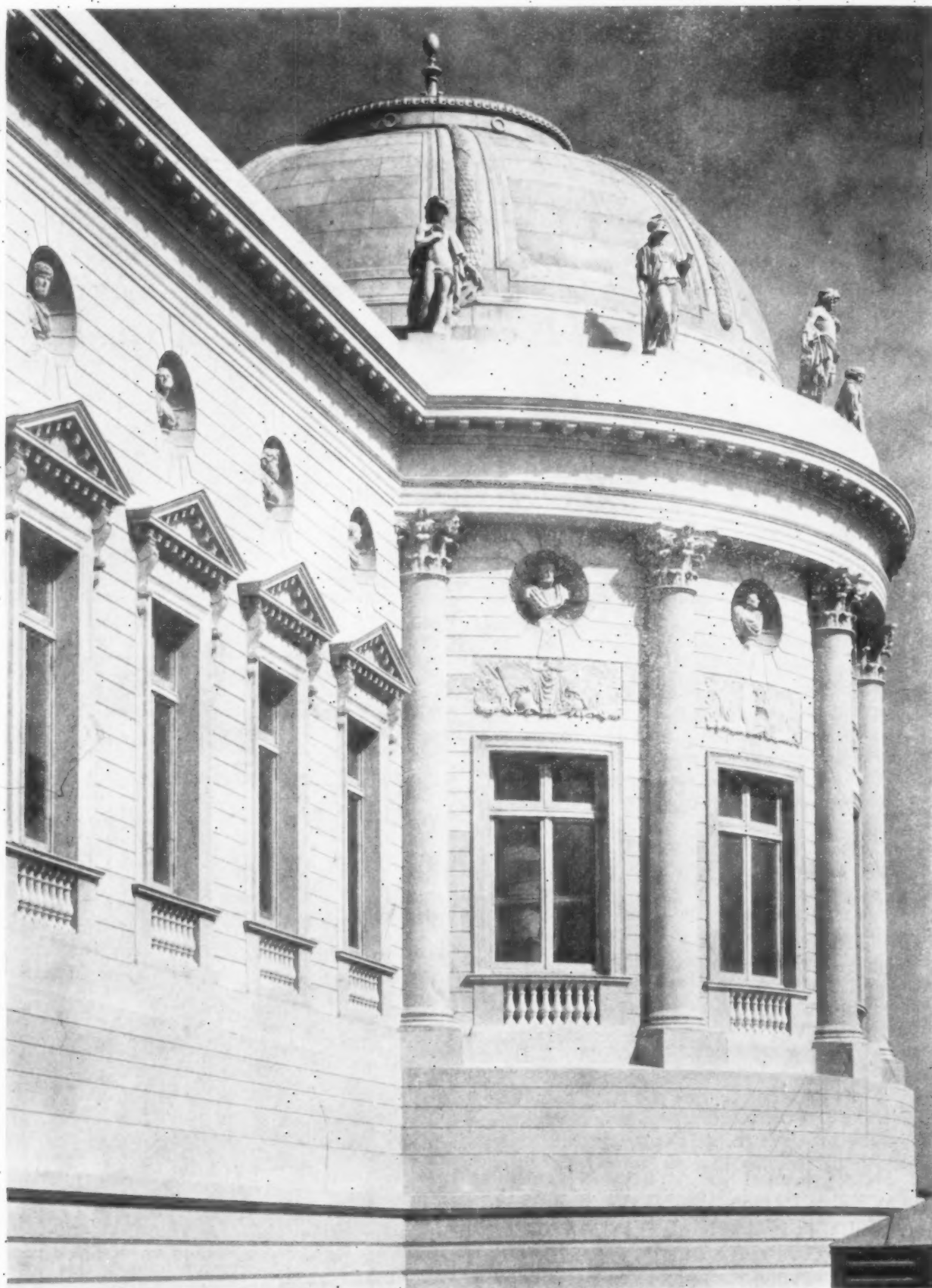


The Tapestry Gallery

is not exact. If it is desired to reproduce an ancient work it is essential to reproduce exactly its proportions and disposition of parts. The change in the relations between the entrance arch and the cornice and attic above it gives a very different character from that of the original and does not improve upon it. The variation in the pavilion ends and the return of the secondary cornice against the end walls, instead of carrying it around the corner, do not improve the result. It is such slight changes as these in the relation of parts as well as the elimination of the projection of the pavilion's beyond the screen which gives to this most important elevation the effect of a paper design. In the original, the secondary cornice has the greater projection; in the replica this is reversed. Altogether, the changes introduced have not in any case improved upon the original. The grand court of honor is really handsome, but here again the difference in size renders the scale heavy and dry.

As for the plan, this leaves much to be desired. The main block, without the wings, is an eminently well planned little museum of the radiating type. The wings, however, are poorly placed for circulation, the visitor being obliged to retrace his steps throughout their length when once he has traversed them. Of the central mass, the great axial gallery, the small courts and the galleries at each side of the vestibule are wholly successful. The interior treatment of these rooms is very fine, quite ideal for their purpose and beautifully lighted. The little courts give a dramatic contrast, full of character.





DETAIL, SEMI-CIRCULAR BAY WITH DOME
CALIFORNIA PALACE OF THE LEGION OF HONOR, SAN FRANCISCO.
GEORGE A. APPLEGARTH, ARCHITECT



DETAIL OF ROTUNDA
CALIFORNIA PALACE OF THE LEGION OF HONOR, SAN FRANCISCO
GEORGE A. APPLGARTH, ARCHITECT

Imposing as the building is by reason of its bulk and many columns, it must be admitted that as a work of architecture it does not rise to any great height of inspiration. The limitation of plan forced by the adoption of a ready-made exterior could only be fatal to the solution of a proper plan for a museum on modern lines. The old European palaces, which form most of the present museums, are no criterion for the modern museum. The purposes of the museum today are of very recent development, and arrangements even 20 years old are out of date already. In reproducing the exterior scheme, the changes and variation from the original have lost all of the essential character and quality and have not substituted in their place any modern feeling which would have given the building some spirit in sympathy with present-day life and thought.

To criticize an imposing work of architecture into which has gone much thought, study and care, without deducing some constructive lesson from the criticism, is wholly unpardonable. In the case of such a problem as this Palace of the Legion of Honor, other approaches would have been possible. The things desired were a museum and a monument, whose historic traditions and suggestions would bring to mind victorious war in behalf of freedom. But why not, in such a case, create a practical monumental museum plan of the best modern sort, express this plan in a dignified external form, and utilize in its architectural ornamental features those historical suggestions which might bring in the clearest statement of the present purpose of the building? These suggestions might well have come from the *Palais de la Legion d'Honneur* in Paris, or from elsewhere.

It is not possible to achieve a good plan if limited by a ready-made exterior, nor is it wise to erect as a contemporary monument a replica of a building, the purposes for which it was erected being utterly

different from those for which the copy is intended. For this reason the building which we are considering may have its proper reaction upon contemporary architecture. To the critical eye it must present the difficulty, nay, impossibility, of creating a living work of art out of whole cloth. The idea of the replica, whether in sculpture or painting, implies a lesser quality of fineness than that possessed by an original. In a work where not only æsthetic needs are to be met, but practical requirements fulfilled, it is particularly essential to create special forms and arrangements to meet the special conditions. It may well be doubted, in fact, whether the reproduction of any ancient building is really successful. In all ages architecture has constituted a visible, tangible expression of the life of a period and people, and when a building is reproduced at a later period, and particularly in a land far from where the design had its origin, the effort is likely to result in an anachronism.

In the choice, in the first place, of the *Palais de la Segre* in Paris as the original inspiration for the design, there lies a certain error. Although the association of the building has been with the Legion for many years, the contemporary inspiration which produced its architectural form is wholly out of consonance with modern American life. Above all things, this monument should have expressed in enduring form some qualities of the America of today. Much more truly could the influence of the French genius have been expressed in terms which France has taught us to make our own. And so, from the essential basis of æsthetic inspiration, practical purpose, historical suggestion and creative art, this great building points a moral to all architects today whose interest lies in the reproduction of forms and decoration of the past. For those who wish to express the spirit of their own time to hand on to future generations it points a moral as well as a warning.



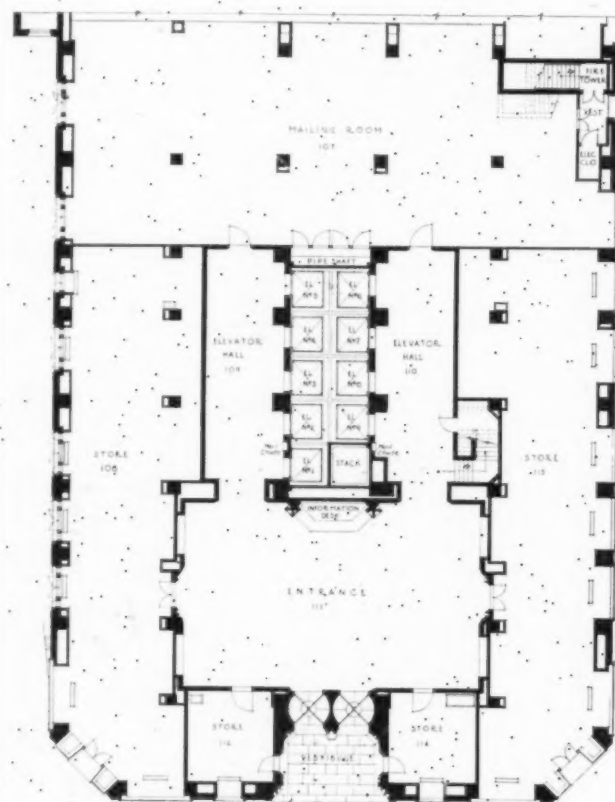
Court of Honor, California Palace of the Legion of Honor, San Francisco



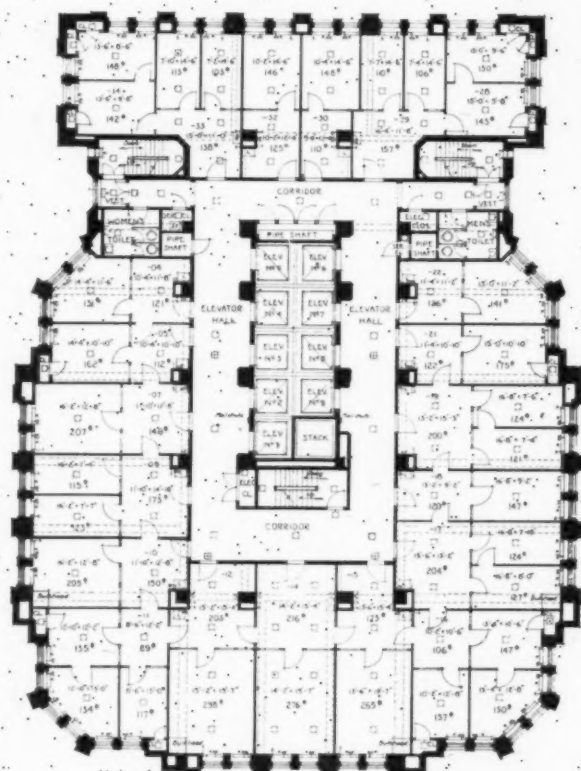
Photos. Trowbridge

TRIBUNE TOWER FROM THE CHICAGO RIVER
JOHN M. HOWELLS AND RAYMOND M. HOOD, ASSOCIATED ARCHITECTS

Plans on Back



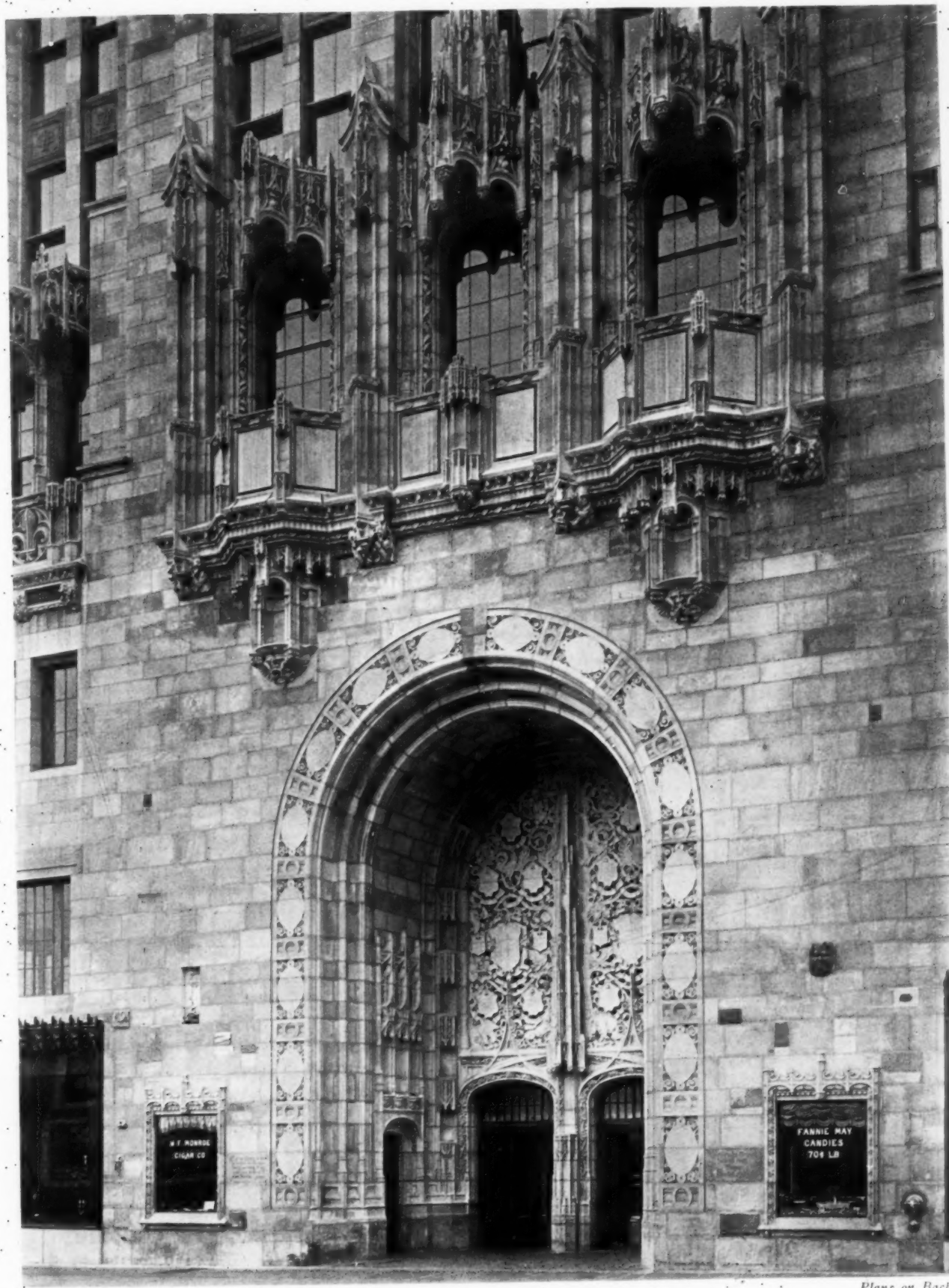
ENTRANCE FLOOR



A TYPICAL FLOOR

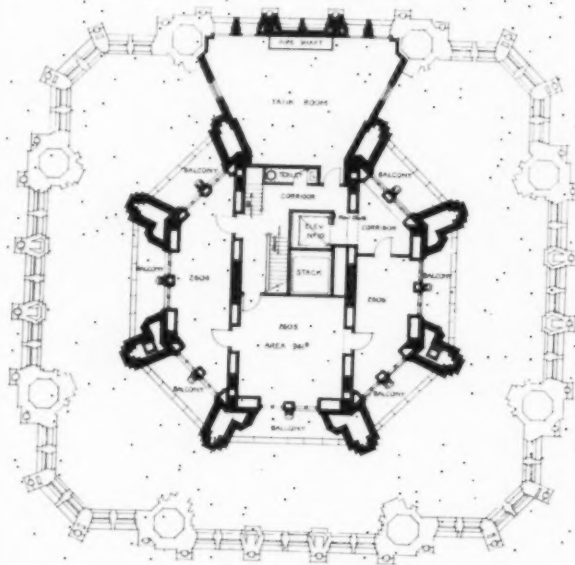
PLANS, TRIBUNE TOWER, CHICAGO

JOHN M. HOWELLS' AND RAYMOND M. HOOD, ASSOCIATED ARCHITECTS

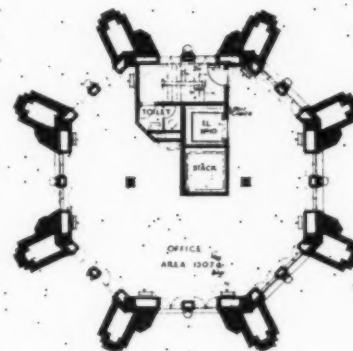


Plans on Back

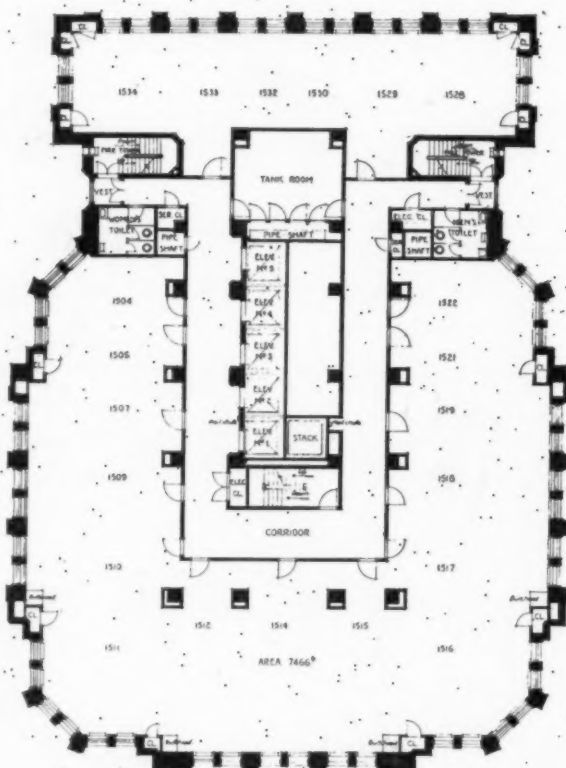
DETAILS OF ENTRANCE, TRIBUNE TOWER, CHICAGO
JOHN M. HOWELLS AND RAYMOND M. HOOD, ASSOCIATED ARCHITECTS



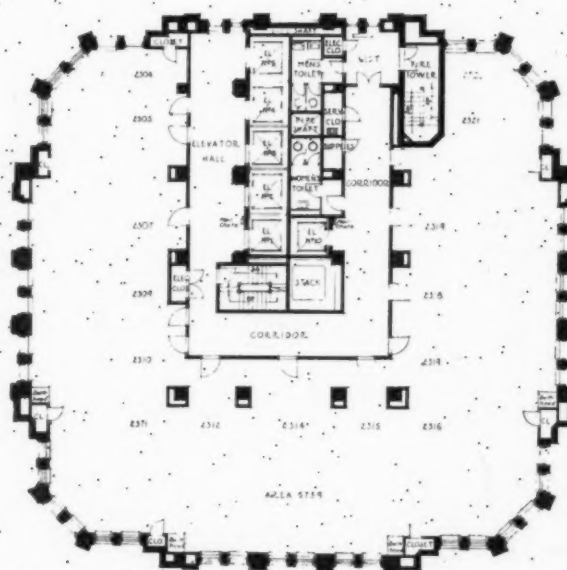
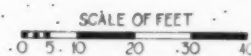
26th FLOOR



27th FLOOR



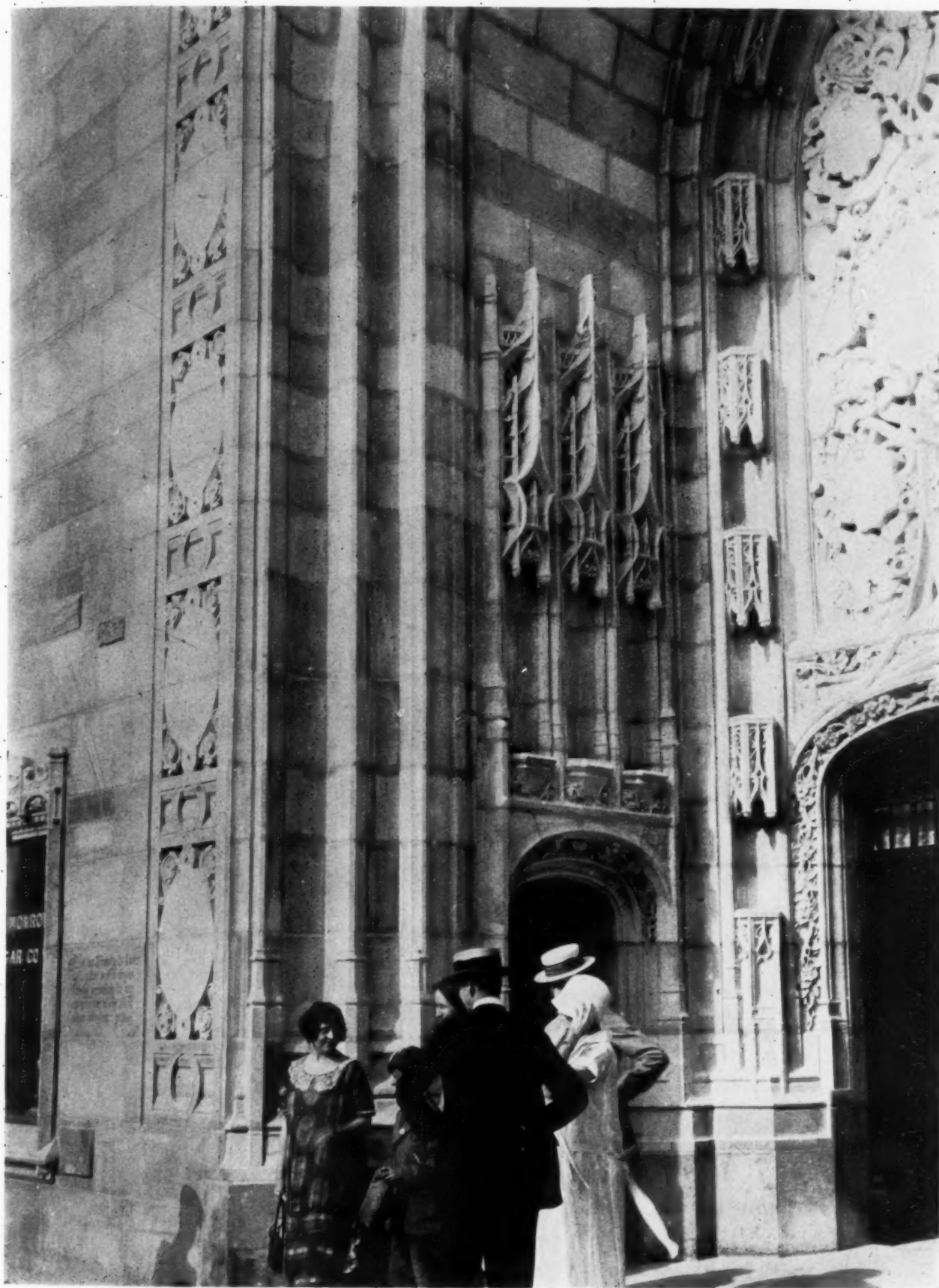
15th FLOOR



23d FLOOR

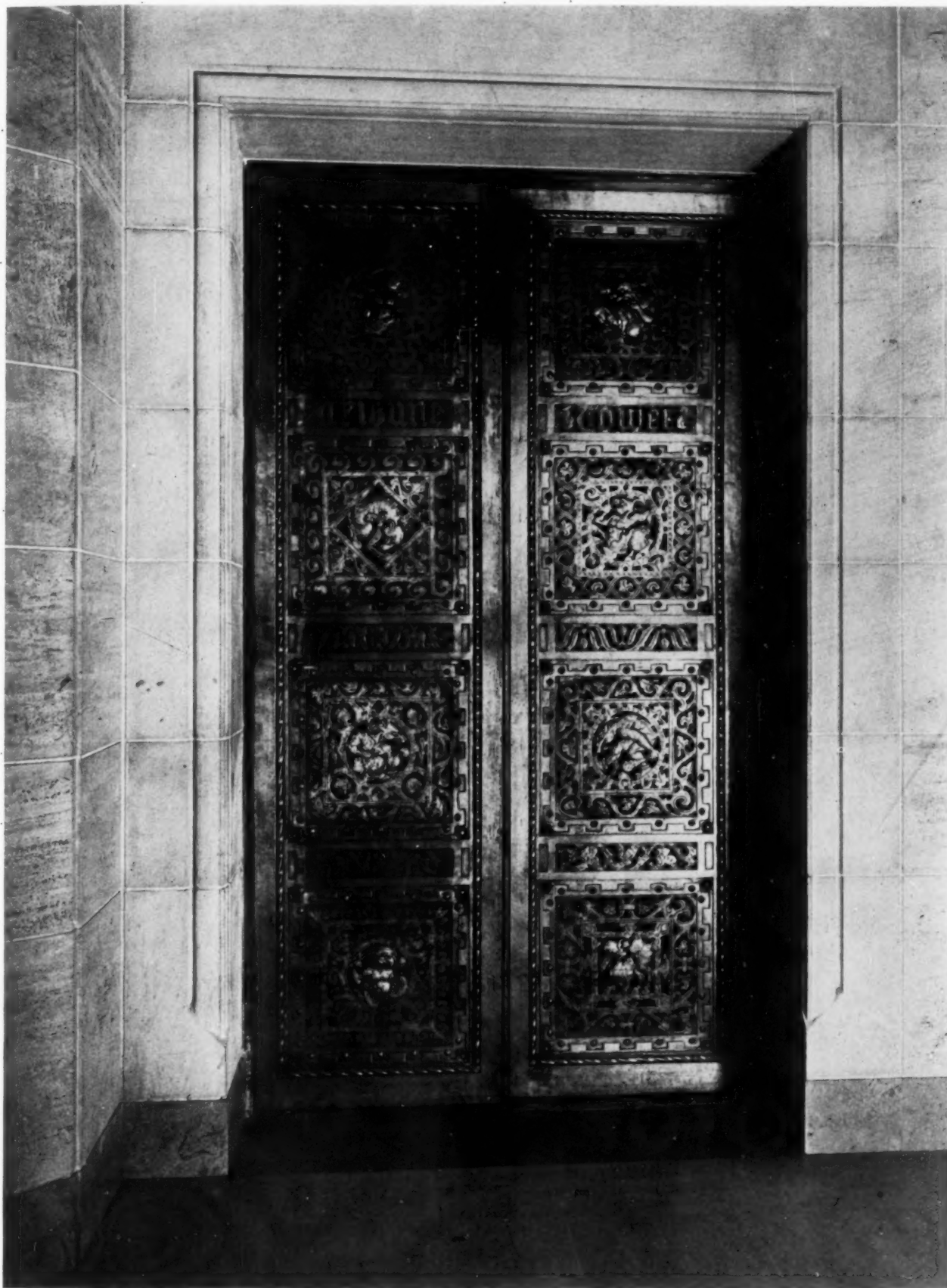
PLANS, TRIBUNE TOWER, CHICAGO

JOHN M. HOWELLS AND RAYMOND M. HOOD, ASSOCIATED ARCHITECTS



DETAIL, MAIN ENTRANCE, TRIBUNE TOWER, CHICAGO
JOHN M. HOWELLS AND RAYMOND M. HOOD, ASSOCIATED ARCHITECTS

Architectural
Library



DETAIL, BRONZE ELEVATOR DOORS, TRIBUNE TOWER, CHICAGO
JOHN M. HOWELLS AND RAYMOND M. HOOD, ASSOCIATED ARCHITECTS

Architectural
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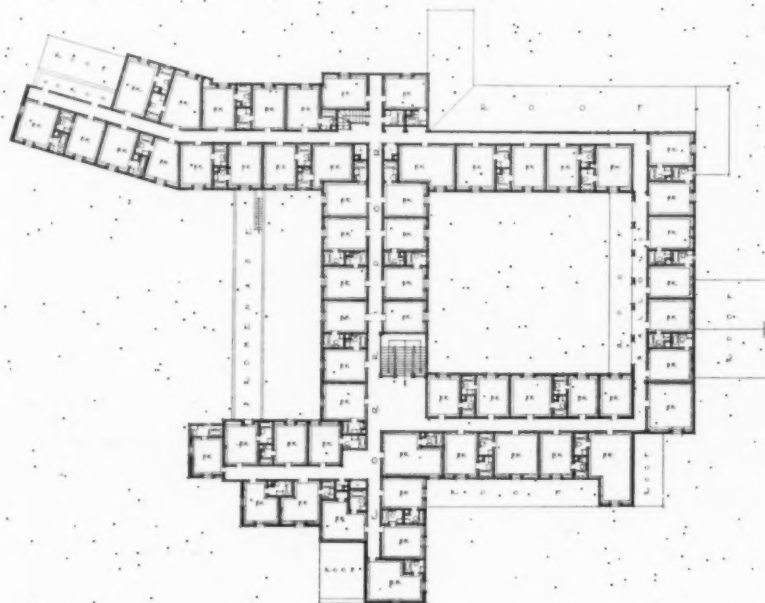
DETAILS OF CARVING, TRIBUNE TOWER, CHICAGO
JOHN M. HOWELL'S AND RAYMOND M. HOOD, ASSOCIATED ARCHITECTS

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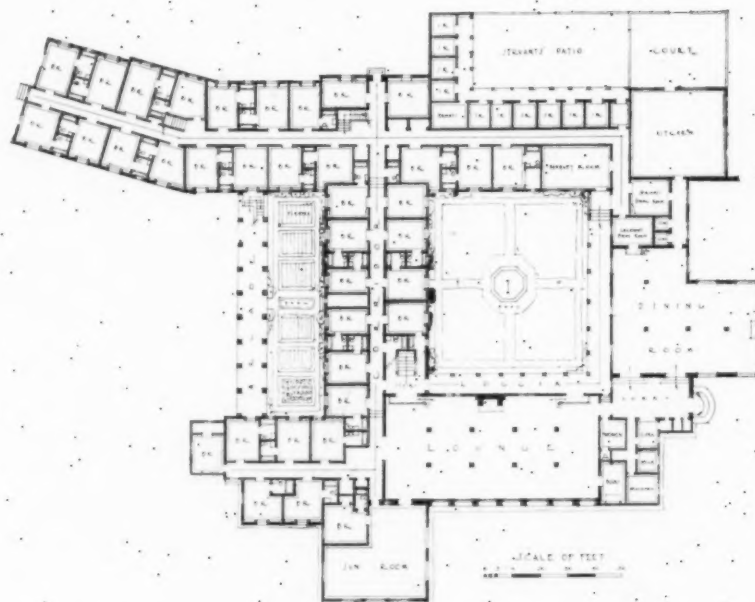


Plans on Back

PATIO OF THE CASA DE MANANA, LA JOLLA, CALIF.
EDGAR V. ULLRICH, ARCHITECT



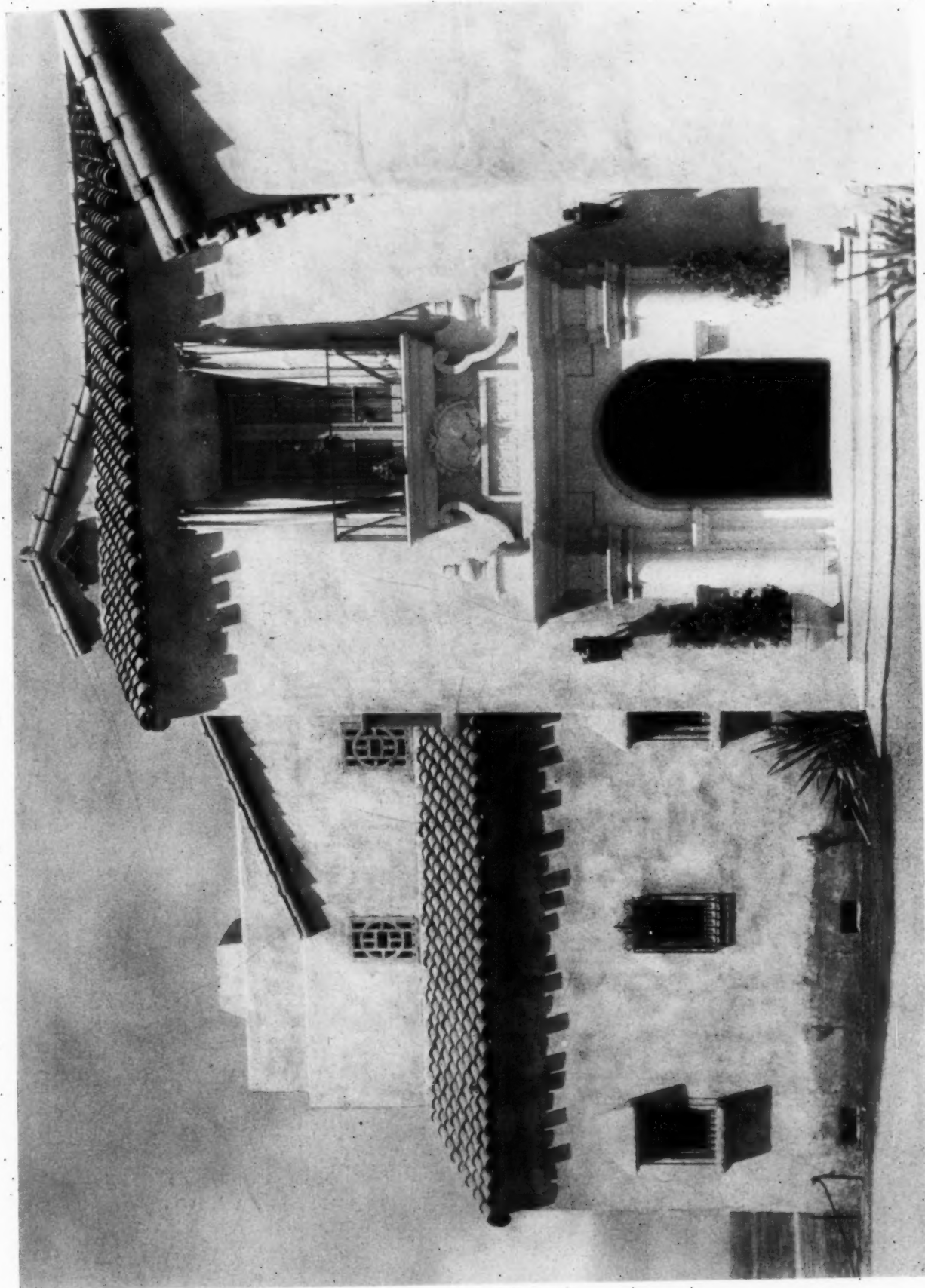
SECOND FLOOR



FIRST FLOOR

PLANS, CASA DE MANANA, LA JOLLA, CALIF.

EDGAR V. ULLRICH, ARCHITECT



DETAIL, ENTRANCE TO THE CASA DE MAÑANA, LA JOLLA, CALIF.
EDGAR V. ULLRICH, ARCHITECT

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DETAIL, CLOISTER IN PATIO OF THE CASA DE MANANA, LA JOLLA, CALIF.
EDGAR V. ULLRICH, ARCHITECT

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Spanish Architecture in the Modern Hotel

By BOARDMAN PICKETT

THE "Casa de Manana," La Jolla, California, is a striking example of a hotel which includes all modern conveniences and at the same time possesses much Old World charm and picturesqueness of appearance. In this new hostelry, designed by Edgar V. Ullrich, the general principles of Spanish Colonial architecture have been successfully adapted to the topography, climate and the needs of American life. So perfectly has the hotel been fitted into its surroundings that it seems to be a part of the promontory on which it stands. Its low, irregular shape, its broken roof lines of various heights, and its neutral toned walls set off by red tiles make the building seem to be almost a continuation of the shore line itself. As one looks down upon the hotel from near-by elevations, the tiled roofs rise like ledges of warm toned rock from the water's edge.

Aside from their picturesqueness, perhaps the chief reason for the frequent adoption of the Spanish types of architecture in southern California is their suitability to the climate. This is particularly true of coast cities, where prevailing winds make outdoor living unpleasant, excepting in sheltered

spots. The Casa de Manana meets this situation by providing a large patio, which is entirely surrounded by the various parts of the building, but which is open to the sun and sky. From an architectural point of view this patio is interesting because each of its four sides has been worked out differently. On one side is a loggia extending to the second story line, where comfortable chairs tempt visitors to linger and bask in the sunshine. On the opposite side there is a fine iron balcony a few feet above the ground and running the entire length of the patio. A red tiled roof projecting over a loggia gives a pleasing note of color to the third side, while the fourth is made interesting by full-length doors opening onto small balconies and by an arched window.

There is noticeable variety in the designs of wall openings, and other architectural details in the patio, as well as in other parts of the building. A fountain and semi-tropical plants add to the patio the final touch needed to make it just such a place as visitors from the East and the middle West expect to find in "sunny California,"—a place where they can roam around among the flowers and forget the cold wind



The Casa de Manana, La Jolla, Calif.
Edgar V. Ullrich, Architect



Detail, Doors from Entrance Hall to Living Room,
Casa de Manana

outside. The sense of living an outdoor life in a semi-tropical country is alluring, not only to those who have recently left colder climates but also to those who have become accustomed to the freedom of California living, which is largely out of doors.

In the lounge or living room the same idea of protection from the wind, with apparent out-of-door living, has been successfully carried out. Arched, full-length doors running along the entire side of the lounge give visitors a large part of the pleasure experienced when sitting on a bluff overlooking the sea, at the same time allowing them the comforts of easy chairs and a crackling open fire. The arched doors are so designed that from the outside they resemble the arches of a cloister, thus agreeing with the Spanish style of architecture rather than seeming to break up the exterior wall spaces too definitely, as large windows are likely to do. On the side of the room opposite these doors the lounge opens into the patio, thus admitting fresh air without a strong wind. The dining room carries out the same plan of having large arched windows on the ocean side and providing intimate connection with the patio.

A second patio, protected on three sides from the prevailing southwest winds, affords pleasant seclusion for those occupying the rooms which adjoin it. An arcade running across this patio, from one wing of the building to the other, has a stairway leading up to its balconied roof, where visitors can enjoy



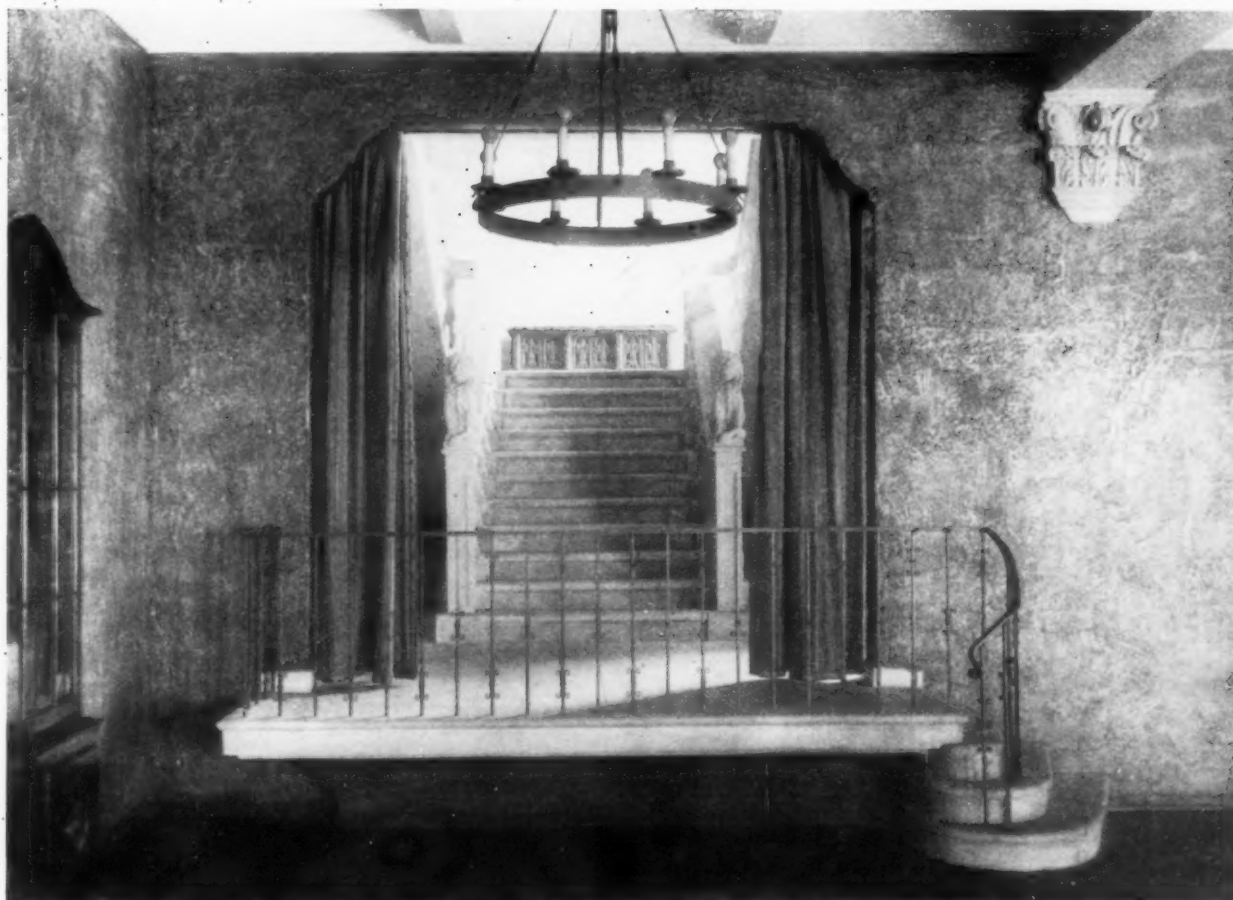
Clerk's Desk, Casa de Manana, La Jolla, Calif.
Edgar V. Ullrich, Architect

sun baths and an unrestricted view of the ocean at the same time. The use of these patios has helped make it possible to give every room in the house a sunny exposure for at least half the day, and balconies opening onto these secluded courtyards tempt visitors to step out of doors more frequently than they might otherwise do. Every room has a pleasant outlook, for as in most Spanish type houses, walls are used to do away with unattractive "back views." Instead of the ordinary square bedrooms, which are likely to be without originality or interest, the architect devised 49 different shapes for the 86 bedrooms of the Casa de Manana. Each has a different ceiling line, being incorporated into the roof line itself. Wardrobes instead of closets have been provided for the bedrooms, in many instances one being built in at each side of the window to give the effect of thick adobe walls, often found in Spanish houses.

Among the interesting features of the main floor of the hotel might be mentioned the banquet room for private dinner parties and the "book nook." The architectural features for both of these rooms were copied from Spanish originals. The lobby, the main dining room, and the children's dining room are all more or less Spanish in general treatment, and the lounge is partly Spanish and partly Italian in effect. Since this room is frequently used for musical events, it is particularly fortunate that the arrangement of bays makes the acoustic properties of the



Detail, Window with Hood and Grille in Side Wall, Casa de Manana

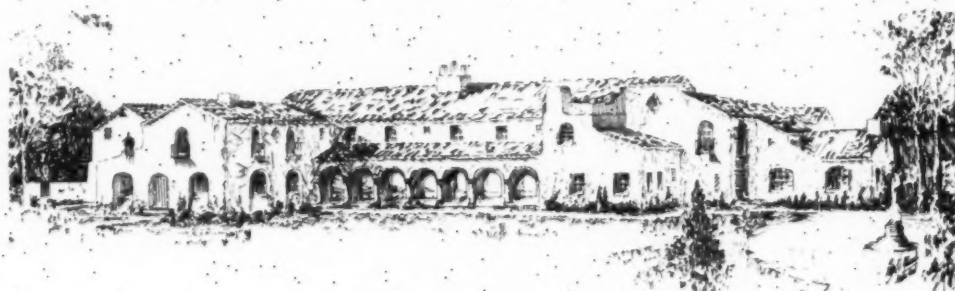


Main Stairway and Door to Living Room, Casa de Manana, La Jolla, Calif.
Edgar V. Ulrich, Architect

room unusually fine. Servants' quarters have been built around their own patio, with a continuous loggia. There is a separate service court, below the sidewalk level, where trucks can drive in and unload behind closed gates, without being seen from outside.

The architect has been complimented not only on the promptness with which the construction of the hotel was completed but also on its moderate cost. Ground was broken on October 17, 1923, and the building was completed in time for the opening on July 3, 1924. We understand that much money was saved by working on a "segregated contract" basis, a plan which involved the letting of 39 separate and distinct contracts. This type of contract, which is seldom used in the East, has many advantages over the single or general contract method of building. Each contractor, instead of being a sub-contractor, becomes in a way a general contractor himself, and

takes much more interest in the speedy execution and quality of his part of the construction of the building. In hotel construction perhaps more than in any other type of building this method of segregating the contracts is most desirable and advantageous. The care taken in the construction and execution of the detail in the Casa de Manana gives an excellent object lesson in favor of this type of construction. The finish of the exterior stucco walls is an unusually fine example of an antique effect in cement wall surfacing. Details of the entrance door show unusual skill in the execution and setting. The same is true of the few other ornamental details, such as the balconies on the western wing of the structure. Combined with the picturesque design of the building, the fine quality of its construction makes of the Casa de Manana one of the best examples of the adapted Spanish architecture of the Pacific coast.



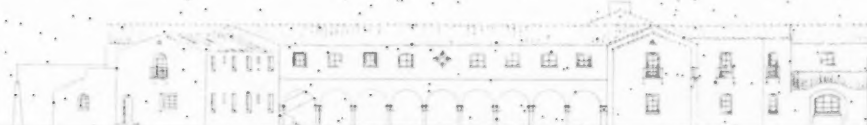
Architect's Sketch of the Western Elevation



SOUTH ELEVATION



WEST ELEVATION



NORTH ELEVATION



EAST ELEVATION

SCALE OF FEET

Scale Elevations, Casa de Manana, La Jolla, Calif.
Edgar V. Ullrich, Architect

THE BUILDING SITUATION

A MONTHLY REVIEW OF COSTS AND CONDITIONS

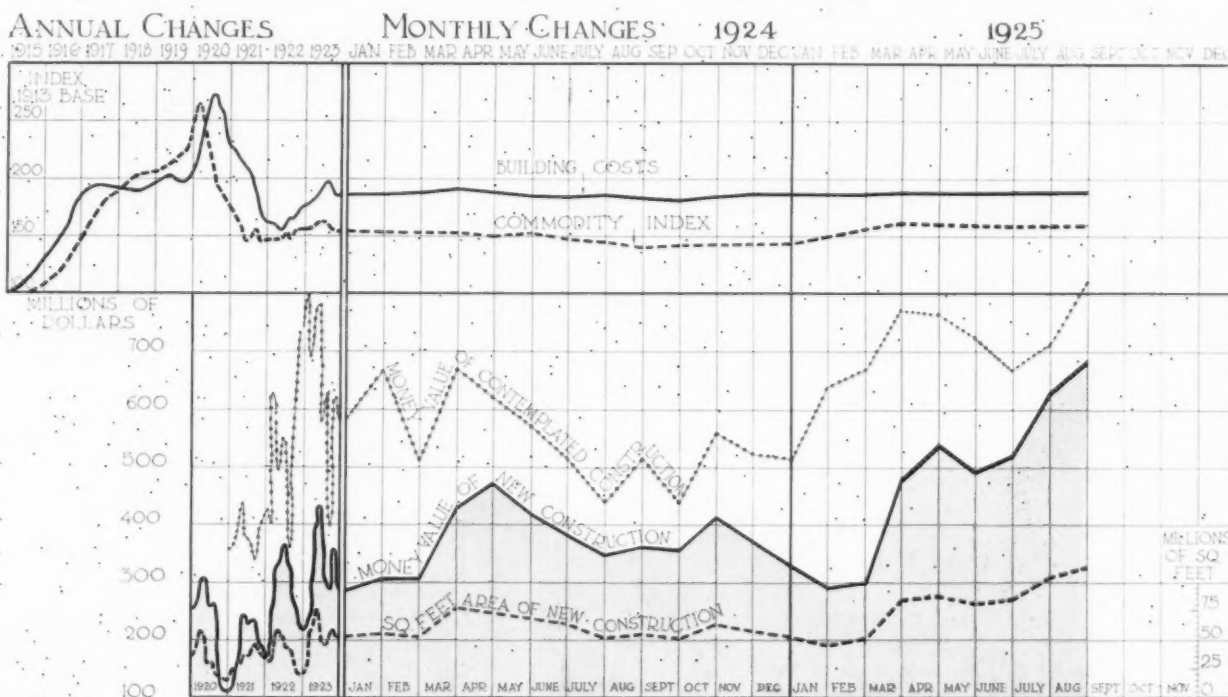
BYOND all forecasts—beyond all expectations, and almost beyond belief—is the amazing volume of construction which has developed during the summer months as indicated here.

When THE ARCHITECTURAL FORUM'S Forecast of Building Construction for 1925 was published last January, it was confidently expected that this would prove to be another \$5,000,000,000 year, but from all appearances the value of construction will go to beyond \$6,000,000,000, an amount unprecedented in building history and probably not to be equaled for years to come. It is indeed an astonishing record.

All types of buildings have shared in this unusual volume, the greater contributions coming from the residential and commercial building fields. Perhaps the most amazing phase of this entire situation is the ease with which the building material manufacturing industry has responded to this tremendous demand and has shown its capacity for supplying and delivering materials without the irritating delays which in the past have characterized periods of unusual building activity. In spite of this great vol-

ume, most building operations are moving along smoothly and closely in accordance with time schedules as established by contractors. It may be said that the architectural profession owes a debt of gratitude to building material manufacturers, jobbers and dealers for their foresightedness and business acumen, which have resulted in the establishment of production and distribution facilities great enough to supply this tremendous demand without slowing down the industry or causing a sharp increase in prices which might serve to discourage the building public at a time when optimism is evident.

Considered as a whole, the labor situation is good. Certain of the labor unions have entered into jurisdictional disputes and factional squabbles, which from time to time have threatened or actually caused loss of time and money in building operations. This has been particularly true in the New York district, and it would appear to be a very stupid procedure on the part of organized labor to do otherwise than arbitrate such difficulties, or else to postpone settlement until such a time as the pay envelope is leaner.



THESE various important factors of change in the building situation are recorded in the chart given here: (1) *Building Costs*. This includes the cost of labor and materials; the index point is a composite of all available reports in basic materials and labor costs under national averages. (2) *Commodity Index*. Index figure determined by the United States Department of Labor. (3) *Money Value of Contemplated Construction*. Value of building for which plans have been filed based on reports of the United States Chamber of Commerce, F. W. Dodge Corp., and *Engineering News-Record*. (4) *Money Value of New Construction*. Total valuation of all contracts actually let. The dollar scale is at the left of the chart in millions. (5) *Square Foot Area of New Construction*. The measured volume of new buildings. The square foot measure is at the right of the chart. The variation of distances between the value and volume lines represents a square foot cost which is determined, first by the trend of building costs, and second, by the quality of construction.

Details of Boiler Equipment

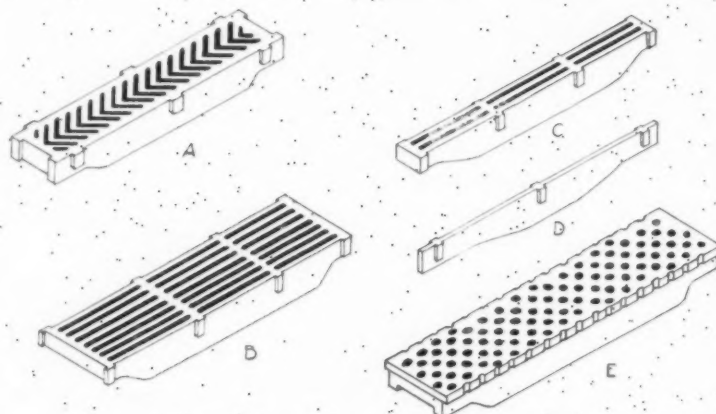


Fig. 25. Several Types of Stationary Grates

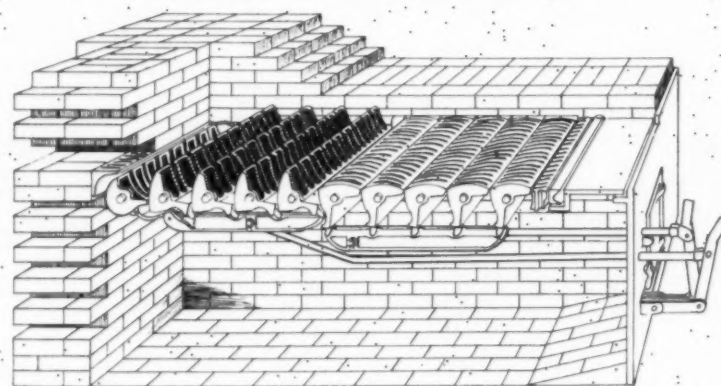


Fig. 26. A Shaking and Dumping Grate

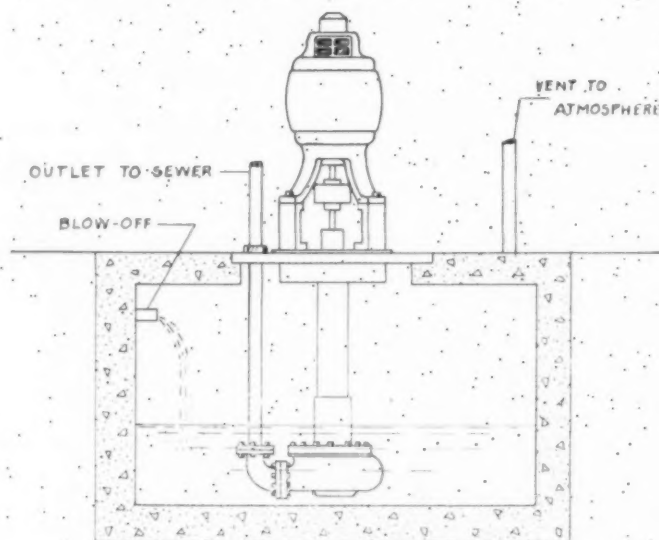


Fig. 28. One Type of Sump Pump

When the boiler is located at too low a level for gravity discharge to the sewer or other place of disposal, as for instance when in the sub-basement of a tall building, a sump must be built for the boiler to blow into. From this sump the water can be raised after it has cooled sufficiently. A relief pipe must extend from the sump to the atmosphere to allow the escape of steam and vapor, and to prevent pressure's forming in the sump. The discharge pipe from the sump must enter the sewer *outside* of the building line. In sumps that are very deep the thrust on the bottom bearing of the pump wears it out quite rapidly. In deep sumps, therefore, ejectors can be used to advantage, and they generally are used.

A herringbone grate is shown at A, and a straight-bar grate about 6 inches wide at B; a straight-bar grate about 3 inches wide is shown at C, and a single straight-bar grate at D. A perforated or pinhole grate for burning fine fuels is shown at E. The herringbone grate is for coal shavings; the straight-bar grates are for wood or coal, and the pinhole for sawdust.

A shaking and dumping grate is shown in Fig. 26. The width of the grate surface in all cases equals the width or diameter of the boiler. Grates are set with a pitch toward the bridge wall of not more than 1 inch in 1 foot of length. That is, in a firebox 6 feet long from front wall to bridge wall, the grates would be set not more than 6 inches lower at the bridge wall than at the dead plate line.

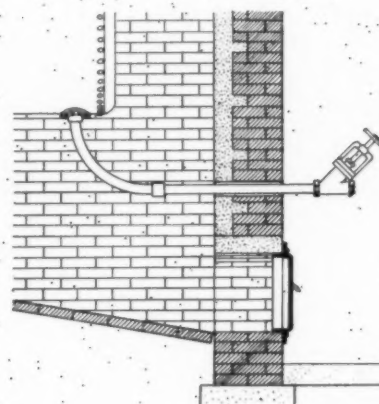


Fig. 27. Blowoff Pipe from a Tubular Boiler

In water-tube boilers the blowoff pipe is usually so located that it is protected from the heat and flames of the combustion chamber. Return-tubular boilers are set with a slight pitch to the rear, where the boiler blowoff is located. In this location it is exposed to the blast effect of the flames, and gas, from which it is protected by a V-shaped wall of fire brick. The blowoff pipe from a tubular boiler is shown in Fig. 27. Extra heavy pipe is used for the boiler blowoff, and a special extra heavy blowoff cock is required. For boilers which will carry pressures in excess of 125 pounds per square inch, two extra heavy valves or one valve and one cock must be used. On a boiler having two or more blowoff pipes, a single master valve may be placed on the common blowoff pipe from the boiler, and one additional valve on each branch from this pipe to the boiler. All fittings between the boiler and valve must be of steel. Globe valves are not permissible for blowoffs, even on low-pressure systems. It is always better, and some state laws require it, that the ends of the blowoff pipes be so located that leakage may be seen at all times. The advantage of this in operation is quite obvious.

ENGINEERING DEPARTMENT

Power and Heating Plants

THE GENERATING PLANT; BOILERS

By J. J. COSGROVE

EDITOR'S NOTE.—Earlier installments of this series of articles on "Power and Heating Plants" by Mr. Cosgrove appeared in THE ARCHITECTURAL FORUM for April and August, 1925. Other installments are presently to follow.

SUCCESSFUL boiler installations require the use of care in the choice of their details and the figuring of their sizes. So important is the use of correct sizes of all parts of boilers that the utmost care should be given to their specification.

Grates. Grate surface in power boilers averages from 4.5 to 5 square feet per rated horse power, 1 square foot of grate surface to 40 or 50 square feet of heating surface. This is based on the development of 1 horse power from 5 pounds of coal. When anthracite buckwheat is to be used, 1 square foot of grate surface will be required for from 35 to 40 square feet of heating surface. In large central plants with mechanical stokers the proportion is 1 square foot of grate to 60 of heating surface. Small, low-pressure steam boilers require about $\frac{1}{2}$ square foot of grate surface to each 100 square feet of radiation; small hot water boilers about $\frac{1}{3}$ square foot of grate surface to every 100 square feet of radiation.

The air spaces in grates average about one-half the total grate area. Theoretically, about 12 pounds of air are necessary for each pound of coal consumed. In practice, however, owing to the large amount of nitrogen in the air, variation in fuels, and the mechanical interference of clinkers and ashes which clog the grates and cannot be removed as soon as formed, from 50 to 100 per cent more air than the theoretical amount must be passed through the fire to maintain natural draft. This amounts to from 18 to 24 pounds of air per pound of coal, or from 236.5 to 315 cubic feet of air at 62° Fahr. and atmospheric pressure at sea level, which must pass up through the grates for each pound of coal consumed. Use of less air than is required results in imperfect combustion of the fuel and the formation of smoke. An excess of air cools the fire and boiler and carries away large quantities of heat in the gases, with consequent waste.

As fuels vary greatly in structure and burning characteristics, many types of grates have been designed to burn them. Several types of stationary grates are shown in Fig. 25, on the preceding page.

Bridge Walls. The bridge wall of a furnace is

built 18 inches higher than the top surface of the grates, and the setting heights of horizontal tubular boilers are based on a requirement of a 25 per cent opening over the bridge wall for bituminous coal and 15 per cent for anthracite. That is, the top of the bridge wall is three-fourths of the distance from the floor line to the under side of the boiler shell. The fire side of the bridge wall is flared toward the combustion chamber to afford an easy and unimpeded passage for the flames and hot gases.

Ashpits: The ashpit for a hand-stoked furnace gives the best results when made large enough to receive the ashes from an 18- or 20-hour run. An ashpit of from 18 to 20 hours' capacity will take the ashes from the fuel burned during the night shift and still have room to protect the grates from the destructive action of accumulated ashes and clinkers. Also, it will permit the removal of the ashes during daytime. In practice, however, ash-pits for hand-fired boilers seldom have capacities for more than 8 or 10 hours' run. Mechanical stoker installations generally have ashpit capacities of from 12 to 14 hours, which is usually satisfactory.

To determine the quantity of ashes to be cared for, multiply the percentage of ashes by the amount of coal consumed during the period the ashpit will not be emptied, then allow 50 per cent additional capacity so that the ashpit will not clog the grates and cause them to burn out. The ash percentages should be based on use of the *poorest* grade of coal likely to be burned. The percentage of ashes in anthracite will average about 18 per cent. In a large office building in New York the ash average for a series of years is given thus: 1916, percentage of ashes 16; 1917, percentage of ashes 18; and 1918, percentage of ashes 32. It will be well to note that the high percentage of 32 was during the war period, when the quality of coal was very poor.

There is about 14.5 percentage of ashes in the best grade of Lackawanna coal, and in the average steam coal the ashes will average 20 per cent. In some of the poorer grades it will average from 26 to 28 per cent. One cubic foot of ashes weighs approximately 40 pounds, which is about the weight of coal. To be exact, anthracite coal weighs about 50 pounds per cubic foot, and bituminous coal weighs 40 pounds per cubic foot. An ashpit must be accessible so that it can be easily cleaned, or the

work is liable to be slighted. Fairly small pits are more easily cleaned than large; therefore, the practice is not to exceed 8 feet in length from the dead plate to the bridge wall. Space in which to work in front of the furnace is of equal importance. There must be sufficient distance between the two rows of boilers, or between the boiler front and wall, in which to handle hoe, rake, slice bar and shovel.

The usual size of blowoff pipe for tubular boilers is $1\frac{1}{2}$ inches for boilers of up to 48 inches in diameter, 2 inches for boilers up to 60 inches in diameter, and $2\frac{1}{2}$ inches for boilers of large diameters. The outlet from a boiler blowoff should be so located that steam or water cannot possibly injure anyone when the boiler is being blown off.

High-pressure boilers located above grade, except in country plants where they can blow into the atmosphere or a stream, may blow off into a cooling tank before discharging into the sewer, and the overflow connection from the tank should connect to the sewer outside of the foundation wall. This is a requirement in most cities. A blowoff tank is shown in Fig. 29. Water enters the condensing tank from the boiler. When released from pressure, some of the water instantly flashes into steam and escapes to the atmosphere through the vapor pipe. Hot water entering the tank causes cold water from the bottom of the tank to overflow to the house sewer outside of the main drain trap. An equalizing pipe admits air to the overflow pipe and thus prevents the water's being siphoned out of the tank.

Sizes of Blowoff Tanks. A blowoff tank should be large enough to hold one gauge of water from the steam boiler. In blowing off a steam boiler, one gauge of water is the most that would be blown off at one time, and if the tank is large enough to hold that quantity it will be sufficiently large for all purposes. The size of tank required can be found by multiplying the length of the steam boiler in feet by the diameter in feet and then multiplying the product by one-third (4 inches being considered the depth of one gauge of water). This product will be the capacity in cubic feet of the tank required.

Example: What capacity blowoff tank will be required for a steam boiler 18 feet long and 5 feet in diameter? This is an average sized boiler.

Solution: $18 \times 5 \times \frac{1}{3} = 30$ cubic feet, and $30 \times 7.5 = 225$ gallons capacity. Such is the answer.

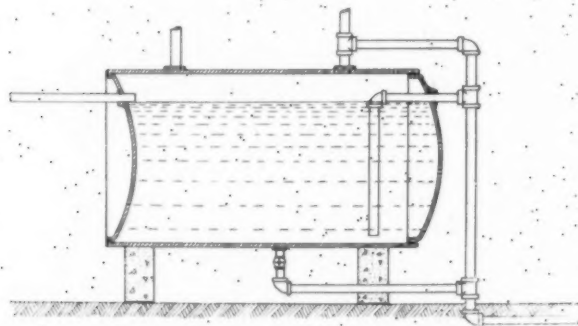


Fig. 29. A Blowoff Cooling Tank

Blowoff outlets to steam boilers are seldom over $2\frac{1}{2}$ inches in diameter; therefore the inlets to blow-off tanks need not be over 3 inches, iron pipe size. The outlet, however, should be 3 or 4 inches in diameter, so that the water will enter the sewer at a low velocity. The vapor pipe should be at least 2 inches in diameter, and if it extends over 100 feet it should be $2\frac{1}{2}$ inches in diameter. When several boilers are connected in battery, one blowoff tank will suffice for all, provided sufficient time is allowed between blowing off the several boilers for the water in the tank to cool, or if provision is made for cooling the hot water with feed water heating coils. Drips from high-pressure plants do not require a condensing tank but may connect to an atmospheric steam trap discharging into the house sewer outside of the main drain trap. Blow-offs from low-pressure boilers need not pass through either a condensing tank or a steam trap but may discharge freely into the house sewer outside of the main drain trap, if there is one, or into the house sewer where there is no main drain trap.

Disengaging Surface and Dry Pipes. Small steam boilers require about $\frac{1}{2}$ square foot of disengaging surface for each 100 feet of direct radiation. That is, for each 100 square feet of direct radiation to be supplied there must be $\frac{1}{2}$ square foot of water surface above the tubes in the boiler from which steam can be liberated. Small boilers also require about $\frac{1}{2}$ cubic foot of steam space for each 100 feet of direct radiation. One square foot of boiler surface will supply boilers of from 7 to 10 square feet of direct radiation. This is found a fair average.

In power boilers it is the practice to provide a dry pipe in the top of a horizontal return-tubular boiler shell to insure dry steam's being delivered to the main. The term "dry steam" is relative, for even dry steam carries anywhere from $1\frac{1}{2}$ to 3 per cent of moisture. A dry pipe with sheet metal wings is shown in Fig. 30. The dry pipe is fitted close to the top shell of the boiler inside, and the T-branch extends up into the steam-main nozzle.

Commercial Rating of Boilers. For convenience in comparing and selling boilers of similar designs, manufacturers rate them according to the heating surfaces they contain. Heating surface in this sense means the surface in the boiler shells or flues that is exposed to the direct heat of the flames and gases. For instance, the surface of the lower half of the shell of a horizontal return-tubular boiler, the two ends less the circles punched out for boiler flues, and the inner surface of the boiler flues totaled would represent the heating surface of that boiler. The surface of a tube exposed to the heat of flames or hot gas is the heating surface, while in a water-tube boiler the outside of the tube is the heating surface. The heating surfaces of boilers are not all of equal value, those exposed to the direct heat of flames and gas being the greatest, while fire tubes in return-tubular boilers have the least. In a water-tube boiler the surface is exposed more equally than in a hori-

zontal return-tubular boiler, so it has a higher rating.

In horizontal return-tubular boilers the proportion of flue surface exceeds that of the direct-fire surface. This proportion will run anywhere from one of fire surface to three of flue surface down to two of fire surface to one of flue surface. The best proportion for boilers is one-third flue to two-thirds fire surface. The heating value of return-tubular boilers, having various ratios of fire surface to flue surface, can be found in Table III. Manufacturers base their ratings on 10 square feet of heating surface per boiler horse power for horizontal return-tubular and water-tube boilers, and $8\frac{1}{2}$ square feet of heating surface per boiler horse power for Scotch marine boilers, which are sometimes used.

TABLE III

HEATING VALUE OF BOILER SURFACE	
Ratio of fire to flue surface.	Units absorbed per square foot heating surface per hour
1 to 3.....	2,000
1 to 2.....	2,200
1 to 1.....	2,400
$1\frac{1}{2}$ to 1.....	2,600
2 to 1.....	2,800

Capacity of a Boiler. The manufacturers' rating of boilers is what is known as the *rated* horse power of boilers, and must not be confused with the *developed* or *actual* horse power, which means the actual horse power developed when operated anywhere from rated capacity to 300 per cent over capacity or more, as many boilers are. The rated horse power is a fixed unit. The actual or developed horse power is a variable quantity. A developed horse power is equal to the evaporation of 34.5 pounds of water per hour from and at 212° Fahr. That is, assuming the feed water to be at a temperature of 212° , 1 boiler horse power will evaporate 34.5 pounds of that water to steam at atmospheric pressure, sea level, or steam at 212° temperature. According to the A. S. M. E. standards, 970 heat units are absorbed in vaporizing one pound of water from and at 212° , therefore 1 boiler horse power is equal to 34.5×970 or 33,465 B.t.u. It will be observed that developed horse power is more dependent on heat than surface. It is a measure of evaporation, not of extent. The capacity of a boiler means the total amount of water it will evaporate from and at 212° , or the total boiler horse power it will produce. This, as has been said already, is a variable quantity for the reason that the rate of evaporation per unit of surface will depend upon the fuel used and the method of firing. For instance, under natural draft, hand firing evaporates from $6\frac{1}{2}$ to 8 pounds of water per pound of coal, or about 1 pound of coal to each gallon of water. Stoker firing evaporates 9 to $10\frac{1}{2}$ pounds of water per hour per pound of coal, and oil firing evaporates 15.5 pounds of water per pound of oil. Experience proves this an average.

Then too, the use of forced draft changes the

capacity of a boiler. Under natural draft, 1 square foot of grate surface will consume on an average from 10 to 12 pounds of hard coal or from 18 to 20 pounds of soft coal per hour. Under forced draft those quantities can be almost doubled. From what has already been said, it will be seen that a hand-fired boiler using natural draft could be made to evaporate approximately three times as much water from and at 212° , thereby adding that much to the boiler horse power merely by fitting it with mechanical stokers and forced draft. It follows as a natural consequence that a hand-fired, natural draft power plant which is not developing sufficient power can often be brought up to delivering the required horse power by equipping it with forced draft, mechanical stokers, a combination of the two, or else by use of gas or oil for fuel. In a cast iron sectional house heating boiler, the coal burned per square foot of grate surface will average from 2 to 3 pounds per hour during the day during normal winter weather.

Boiler Overloads. In practice, boilers often operate continuously at capacities of from 150 to 200 per cent over their ratings, and for short periods 400 and even 500 per cent overloads have been reached. This means that a boiler has been rated to develop 1 horse power for every 10 feet of heating surface when hand fired, and burning about 5 pounds of coal per hour per square foot of grate surface. In use, however, it is fired automatically, using gas, oil, pulverized coal, or mechanical stokers and forced draft, and is simply developing the horse power it should under the circumstances, evaporating an amount of water corresponding to the kind and amount of fuel burned. In that sense it is in no way an "overload" as the term is commonly used, although overload is the technical expression obtaining in the engineering profession to indicate a boiler operating at a rate greater than its rated capacity. In the common acceptance of the term, it would imply that the boiler is being taxed beyond what the manufacturer believed was safe or what it should perform. "Overloading" does not materially shorten the life of a boiler. Under average conditions the age limit of a lap seam, horizontal, return-tubular boiler over 36 inches in diameter carrying over 50 pounds pressure but less than 100 pounds is approximately 20 years. When carrying over 100 pounds pressure, the life is shortened to

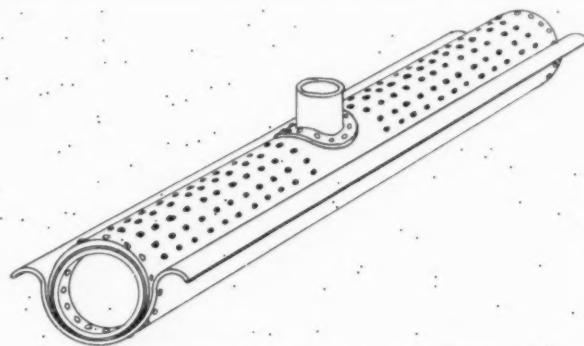


Fig. 30. Dry Steam Pipe with Sheet Metal Wings

from 15 to 18 years, or perhaps about 10 per cent.

Efficiency of a Boiler. This means the ratio of heat absorbed in the generation of steam to the total amount of heat in the fuel consumed. When coal is used, it is impossible to release all the heat stored up in the fuel. A portion of the coal will fall through the grates or in other ways remain unconsumed and is lost so far as supplying heat to the boiler is concerned. In computing efficiency it would be unfair to charge the boiler with failure to make steam from coal that is not consumed. On the other hand, the fuel must be paid for, and so its value is a proper charge against the boiler as a unit. That is, the efficiency of the boiler unit, consisting of boiler, furnace, stack and grates, is equal to the value of the heat absorbed by the boiler per pound of fuel stoked divided by the heat value per pound of fuel. This is the method of reckoning.

The efficiency of a boiler is extremely variable. In the first place, while the "efficiency" of a boiler is generally spoken of, what is really meant is the overall efficiency of boiler, stacks and blower. The overall efficiency of a boiler depends upon the kind of fuel used, the operating crew, the capacity developed, and the quality of fuel. With oil for a fuel, for instance, an efficiency 10 per cent greater than with coal can probably be obtained in practice; but conversely, if the oil firing is not properly handled it can be made less efficient than when coal is used.

The efficiencies given for boilers are generally overall test efficiencies, which are useful for comparison as to the possibilities with use of different boilers, different settings or different fuels. They do not express, however, the actual, everyday performance of the boilers in operation. Overall test efficiencies for boilers burning oil, for example, will run as high as 83 per cent. Deducting 2 per cent for the steam used for atomizing, this leaves a net test efficiency of 81 per cent for large boilers of from

200 to 500 horse power. In a large, well handled plant the daily average output might show an efficiency as high as from 76 to 78 per cent. In average, ordinary practice, however, with all kinds of settings and all sizes of boilers, it is probable that the efficiency will vary from 70 to 75 per cent.

The highest efficiency obtained from coal under test conditions was 82 per cent. In a large, well operated steam plant the overall efficiency obtained might average 70 per cent. Under test conditions the efficiency has been as low as 50 per cent, and in practice the efficiency will probably vary from 60 to 70 per cent. The average efficiency of water-tube boilers may be taken as 70 per cent, and this seems to be independent of whether the furnace is hand-stoked or mechanically stoked, or the kind of coal used. This average is the result of experience.

Forcing a boiler beyond its rated capacity reduces its efficiency; 225 per cent of rating for a boiler is beyond economical operation. In some cases, particularly in the operation of a plant, the efficiency up to a certain point will increase with an increase of capacity. At 100 per cent rating, however, capacity begins to be at the cost of efficiency. From that point on the efficiency falls, slightly at first, but more rapidly after 150 per cent rating has been passed. In Fig. 31 can be seen an efficiency graph compiled from numerous tests of boilers.

Notwithstanding the fact that efficiency falls off with increases of rating, it is often really economical to operate continuously with overloads of 125 to 150 per cent ratings; for a 10- or 12-hour period at 130 to 175 per cent rating, and in some cases it is found economical to operate at as high as 300 per cent rating. Each case must be considered in the light of existing circumstances to determine whether it is better engineering practice to operate at high overloads or to put in extra boilers, which will probably lie idle much of the time; and the cases differ.

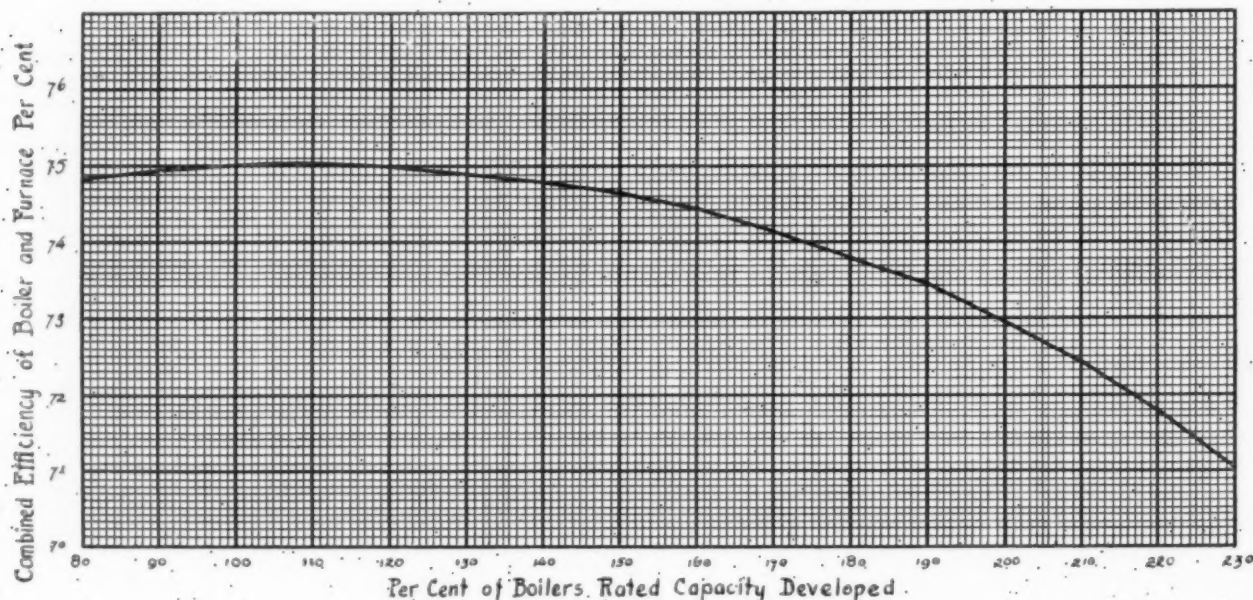


Fig. 31. Boiler Efficiency Graph

The House of Charles Forman, Esq., Winnetka, Ill.

EDMUND B. GILCHRIST, Architect

THE change which came over the planning of the French house in the early part of the eighteenth century gives a starting point for the development of the modern American house plan.

Before the death of the great Louis the emphasis in planning had been placed less upon convenience of access and circulation than upon effectiveness of vistas and impressiveness of size. The cold formality of the seventeenth century had its reaction in the eighteenth, when with the death of Louis and the beginning of the period of the regency the restraint of court formality was promptly removed. This affected at once the houses of the nobility as well as those of the upper *bourgeoisie*. Comfort and privacy were required, and comfort and intimacy of atmosphere were created, all in response to the demands of the social life of the times. Then began that effort toward convenient and thoughtful planning in which the requirements of comfort and beauty were harmonized with amazing skill by architects whose intellectual endowments equaled their aesthetic perceptions. The privacy so necessary to a continuance of the life of the aristocracy brought about the introduction of smaller rooms for general use; it relegated into the discard the long series of rooms *en suite*, and substituted corridors and hallways which gave the necessary circulation without destroying the privacy of any room; service hallways and staircases took their proper places, enabling the domestic staff

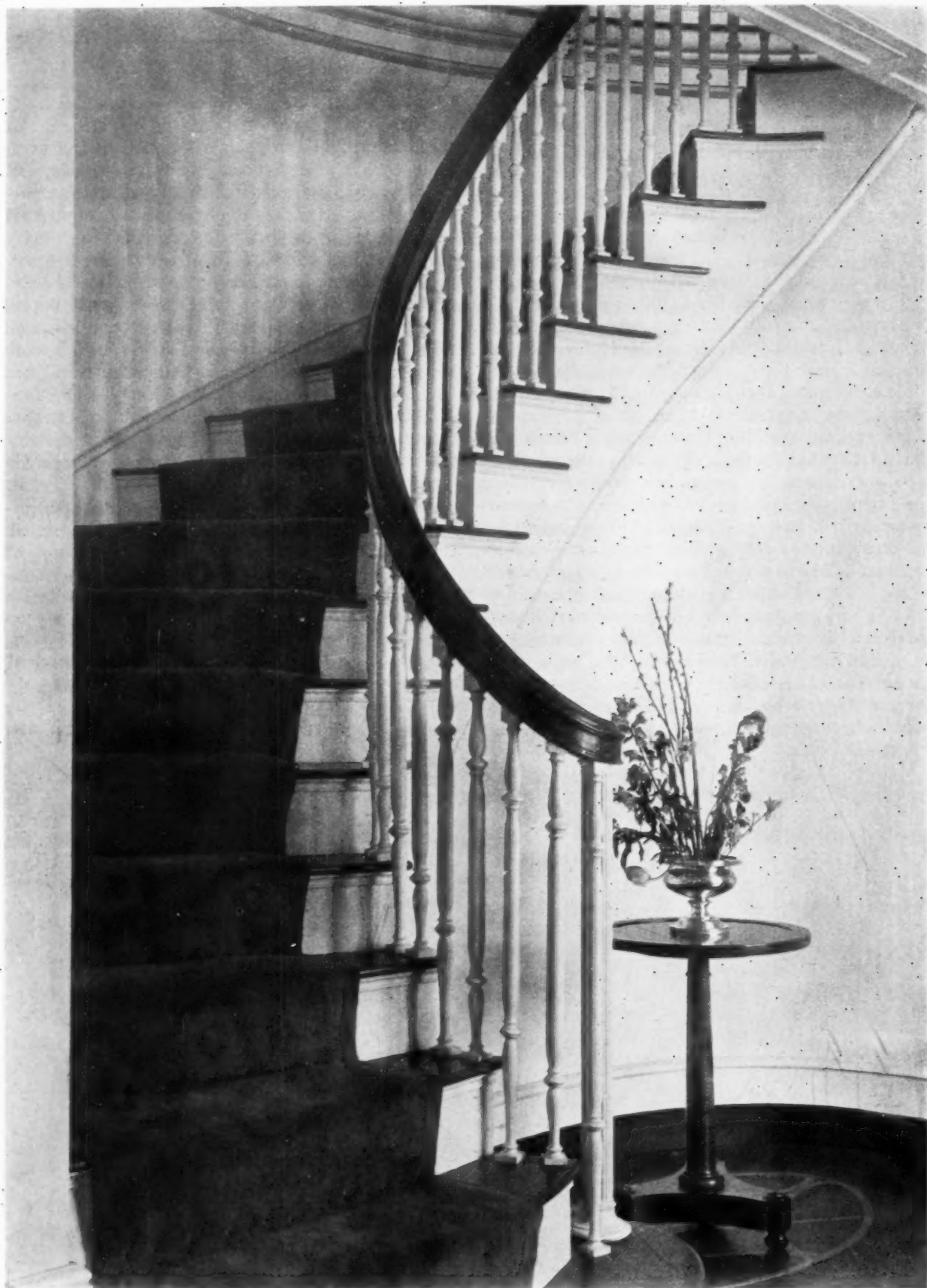
to preserve a discreet invisibility. These and many other innovations came to quicken the architecture of the seventeenth century, almost moribund from over-indulgence in splendor and decorative extravagance.

All of the innovations of this time, so frequently dictated by necessities which originated in methods of living, led to that school of planning which today dominates the world of architecture. The requirements of domestic comfort, of sweetness and light, are just as powerful to influence the modern plan as were the different influences of two centuries ago. A house conceived in the spirit of the small French house of the well-to-do *bourgeoisie* is that designed by Edmund B. Gilchrist for Charles Forman, Esq., at Winnetka. The general plan around an entrance courtyard, the contrast between the entrance elevation in its balanced formality and the sunny garden front, the play of axial composition, all carry the conviction of the Gallic inspiration, even without reference to the style in which the plan is interpreted. In elevation this style presents a simple rendition of the later seventeenth century vernacular, beautifully felt and consistently scaled. Cut stone and stucco combine in the re-creation of the old textures; the detail is restrained and unified to a degree. There is no lack of variety in the scheme, although consistency has been very carefully preserved throughout.

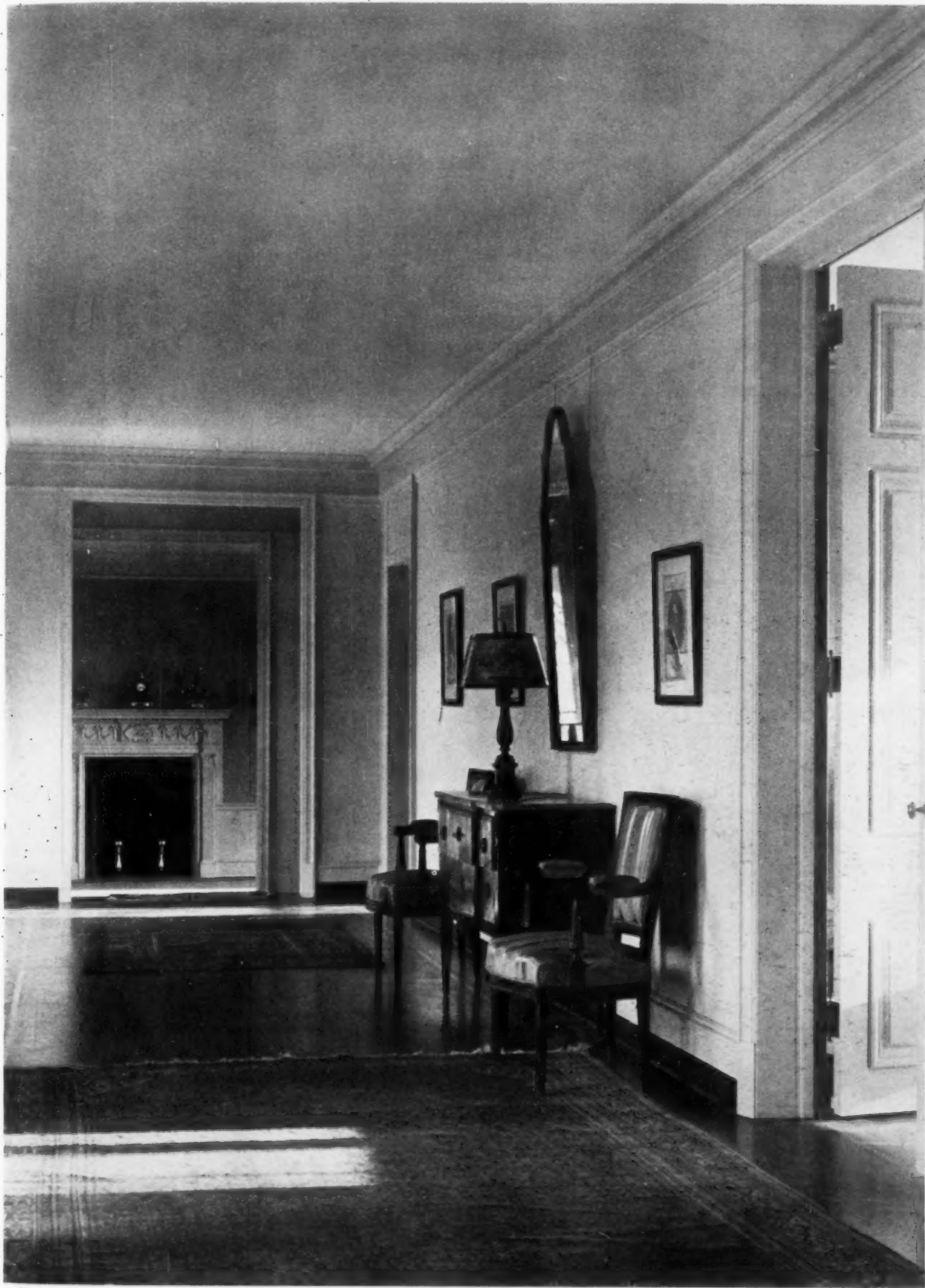
Here is an example of a house thoughtfully planned for the utmost convenience of operation, with



West Elevation and Terrace, House of Charles Forman, Esq., Winnetka, Ill.



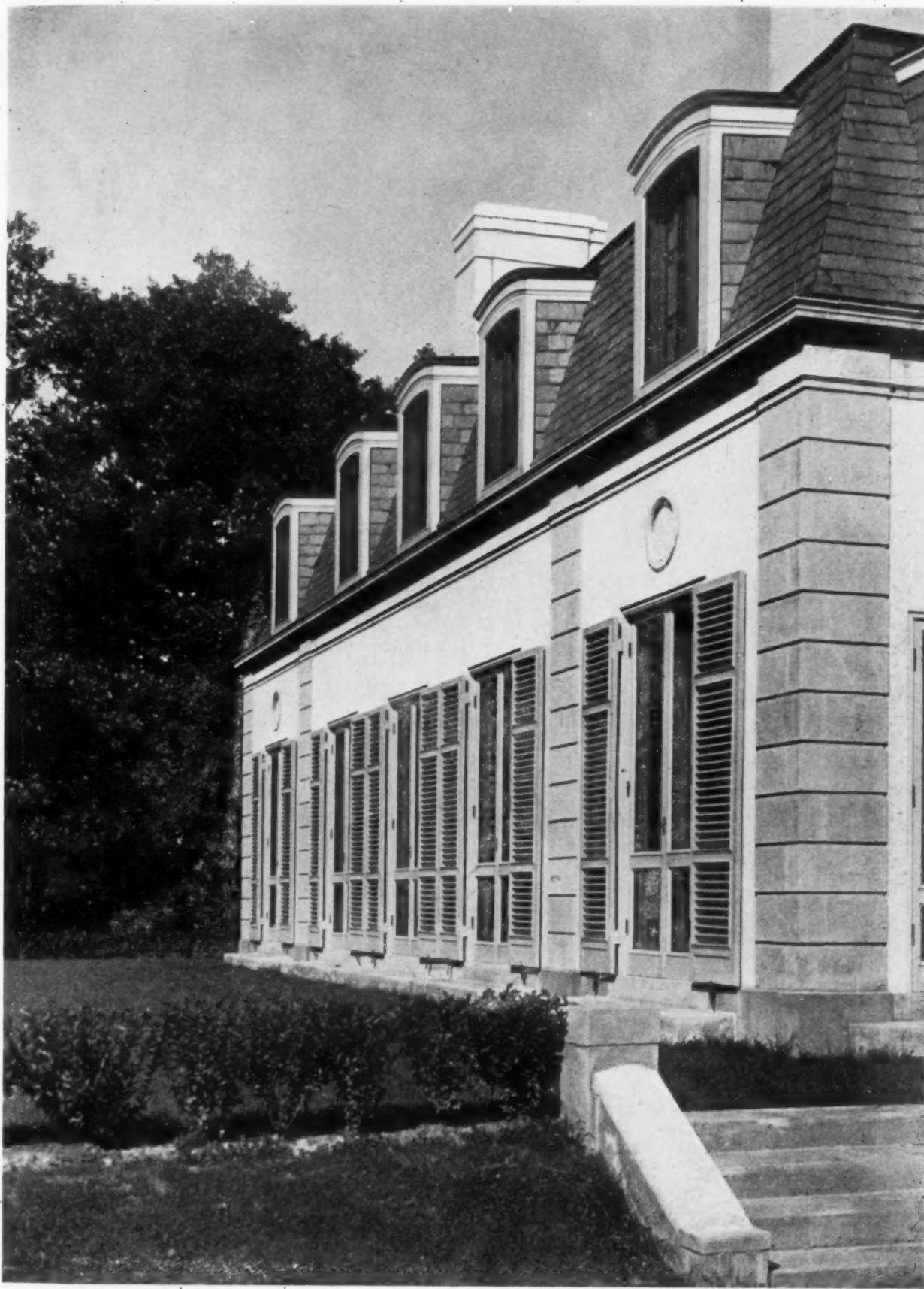
DETAIL, MAIN STAIRWAY
HOUSE OF CHARLES FORMAN, ESQ., WINNETKA, ILL.
EDMUND B. GILCHRIST, ARCHITECT



DETAIL, MAIN HALL,
HOUSE OF CHARLES FORMAN, ESQ., WINNETKA, ILL.
EDMUND B. GILCHRIST, ARCHITECT



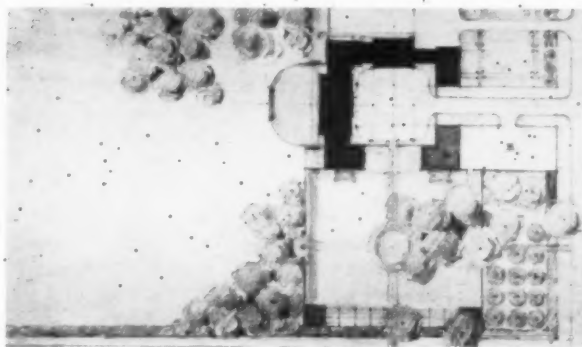
DETAIL, DINING ROOM
HOUSE OF CHARLES FORMAN, ESQ., WINNETKA, ILL.
EDMUND B. GILCHRIST, ARCHITECT



WEST ELEVATION
HOUSE OF CHARLES FORMAN, ESQ., WINNETKA, ILL.
EDMUND B. GILCHRIST, ARCHITECT

the service elements very carefully united to the living quarters, all expressed in definitely stylistic terms. There has been avoided that pitfall for the architect who works in an ancient style,—the likelihood of forcing a plan to fit an exterior. Here the exterior expresses the plan, and the result is a pleasant variation of roof lines, of groupings of smaller elements, and a picturesqueness which, though inherent in the style, seldom found such pleasing expression in its original use. The effect of a dominating lower story adds to the picturesque appearance, and at the same time it sets quite a difficult problem of scale.

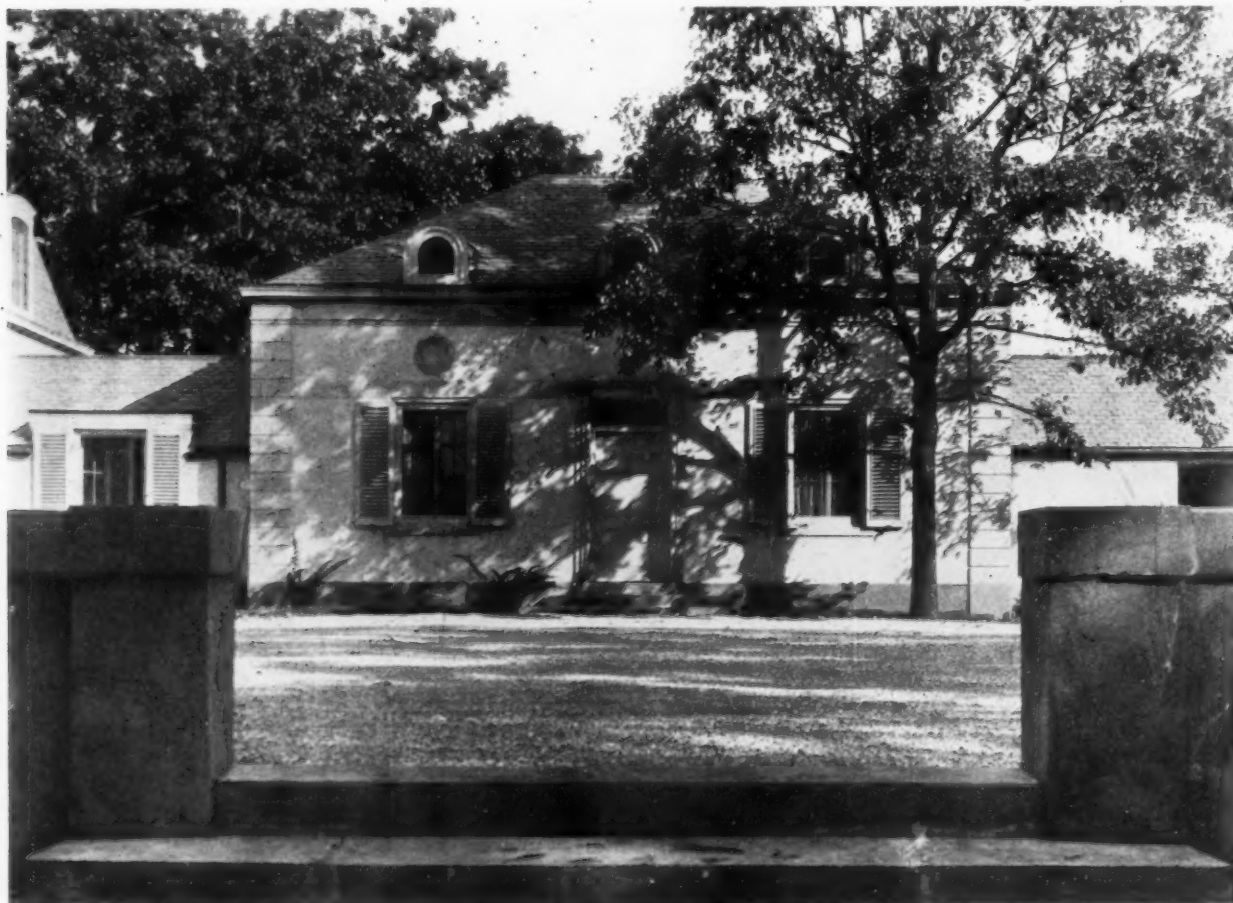
The interiors possess the charm of simplicity imbued with the delicate sophistication of the time of Louis XVI, but without much of the ornament which was frequently found. A fortunate lack of archaeological precision gives the rooms and gallery a free spirit, which is so generalized as to form a background for a variety of furnishings. In this house there could be used with equal appropriateness the French styles of Louis XVI, Directoire and Empire;



Plot Plan of the Estate of Charles Forman, Esq., Winnetka, Ill.

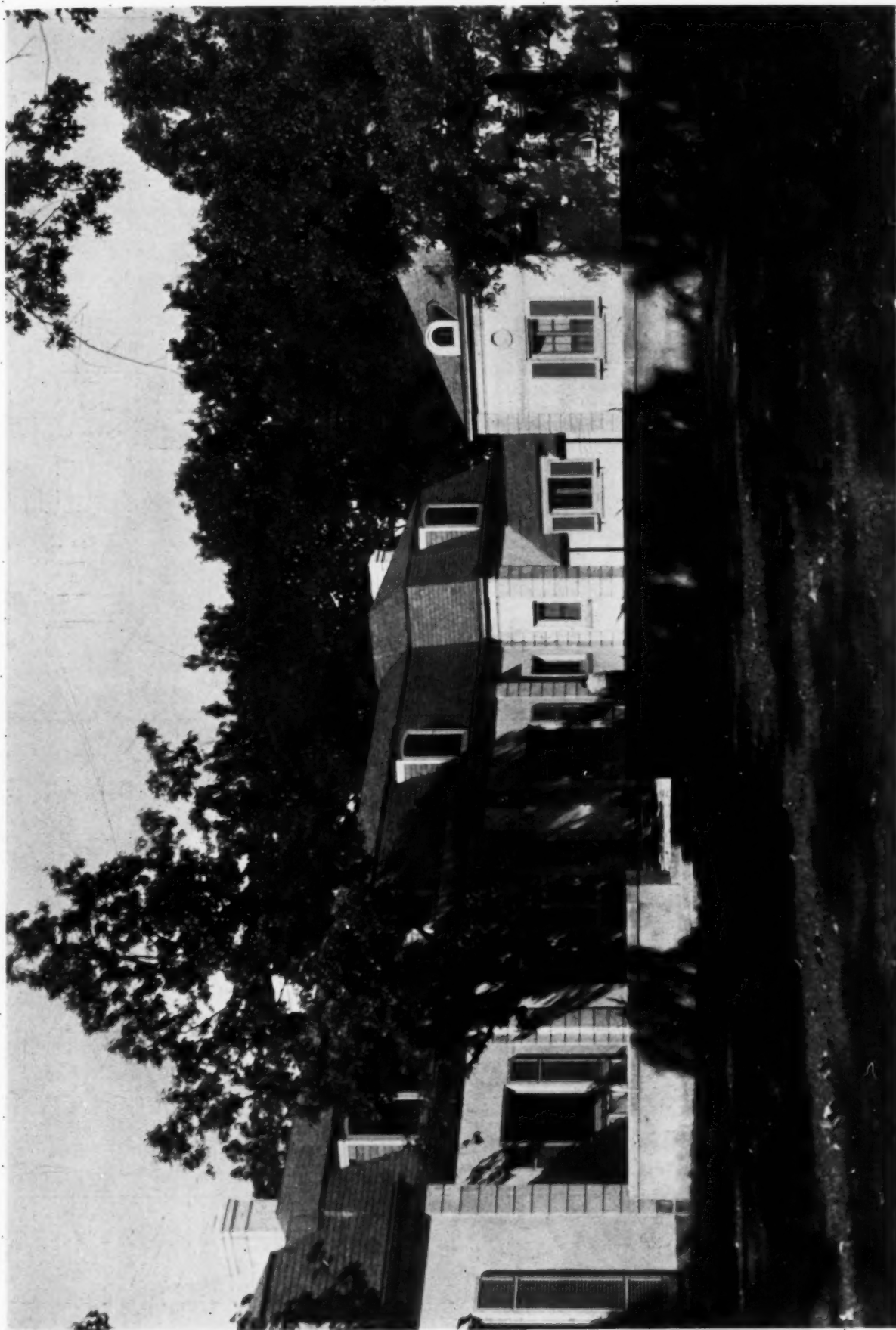
English Hepplewhite or Sheraton; or the American types of the late eighteenth and early nineteenth centuries. The same feeling which characterizes these furniture forms,—the classic revival of the latter part of the eighteenth century,—is the basis of the interior architecture of this charming house. The absence of conventional ornament and the use of beautiful run mouldings give proper neutrality as a background to the walls as a setting for furniture.

There is little that we can say in criticism of the house, and much in appreciation. Perhaps its greatest achievement is its possession of reality, its lack of that all too usual effect in new houses which suggests that a *tour de force* has been accomplished. Here is a homelike place, implying by historic suggestion and dramatic contrasts the tastes and interests of its owner, and securing this is truly an achievement. A definitely continental character is given by the double doors and well chosen hardware, details which strengthen the character of a highly distinguished structure, of a type not frequently seen.



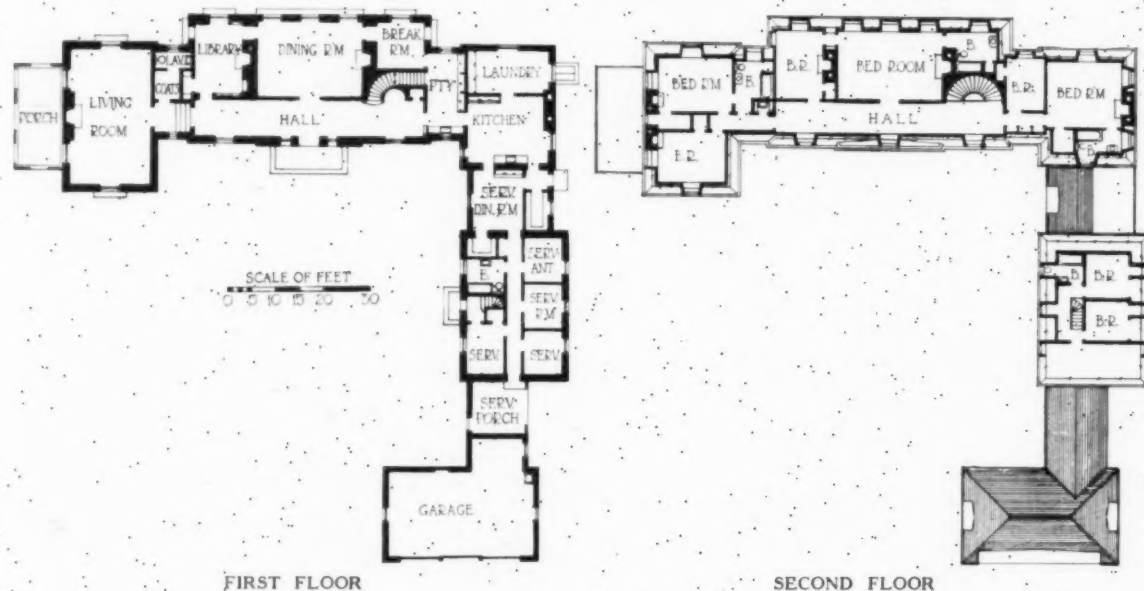
Servants' Building Across Forecourt, House of Charles Forman, Esq., Winnetka, Ill.

Edmund B. Gilchrist, Architect



Plans on Back.

ENTRANCE COURT, HOUSE OF CHARLES FORMAN, ESQ., WINNETKA, ILL.
EDMUND B. GILCHRIST, ARCHITECT



PLANS, HOUSE OF CHARLES FORMAN, ESQ., WINNETKA, ILL.

EDMUND B. GILCHRIST, ARCHITECT



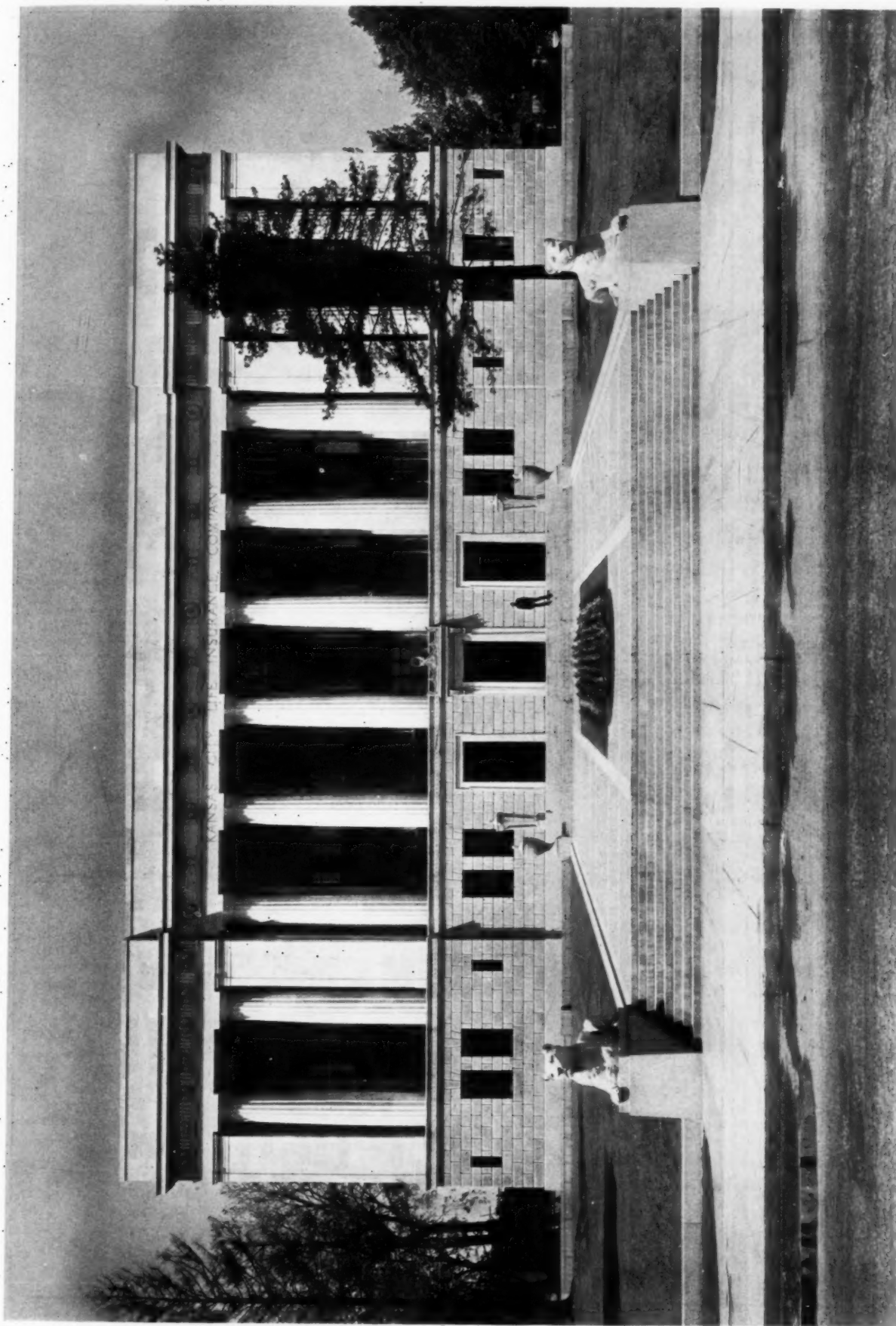
DETAIL, ENTRANCE DOOR, HOUSE OF CHARLES FORMAN, ESQ., WINNETKA, ILL.
EDMUND B. GILCHRIST, ARCHITECT

Architectural
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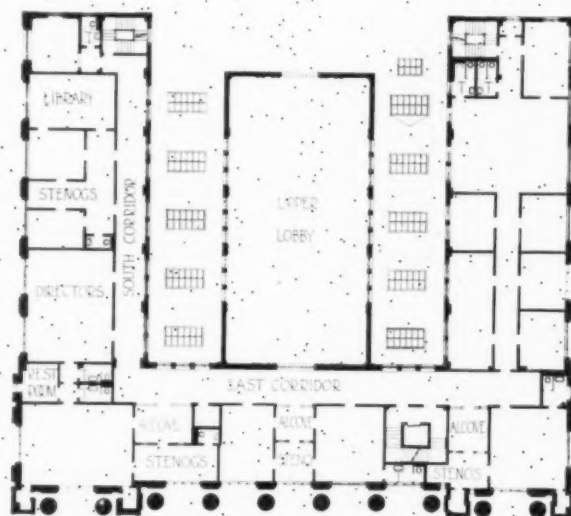
DETAIL, SERVANTS' QUARTERS, HOUSE OF CHARLES FORMAN, ESQ., WINNETKA, ILL.
EDMUND B. GILCHRIST, ARCHITECT.

Architect
Libran

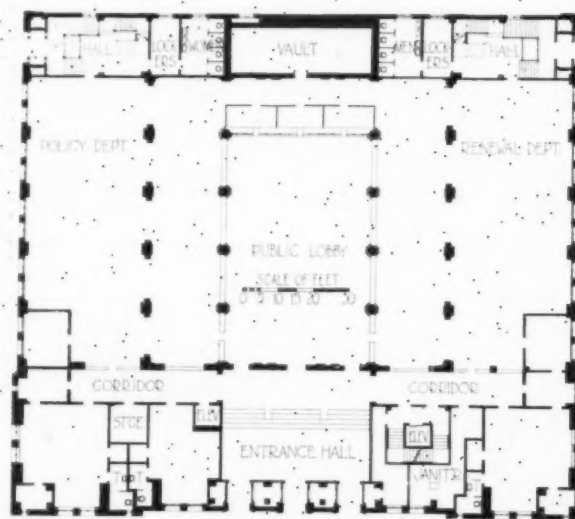


Plans on Back

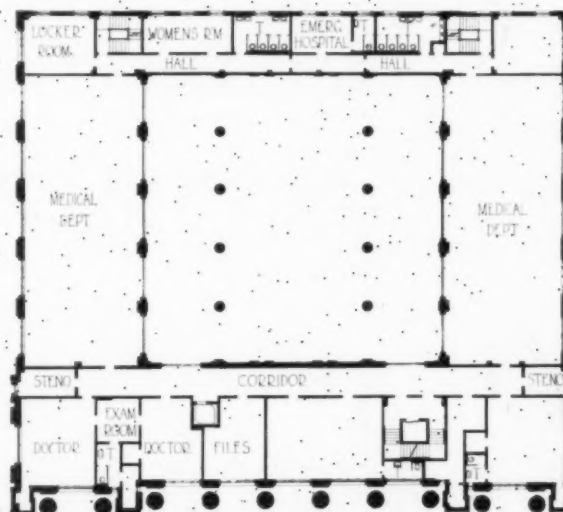
KANSAS CITY LIFE INSURANCE COMPANY BUILDING
WIGHT & WIGHT, ARCHITECTS



THIRD FLOOR



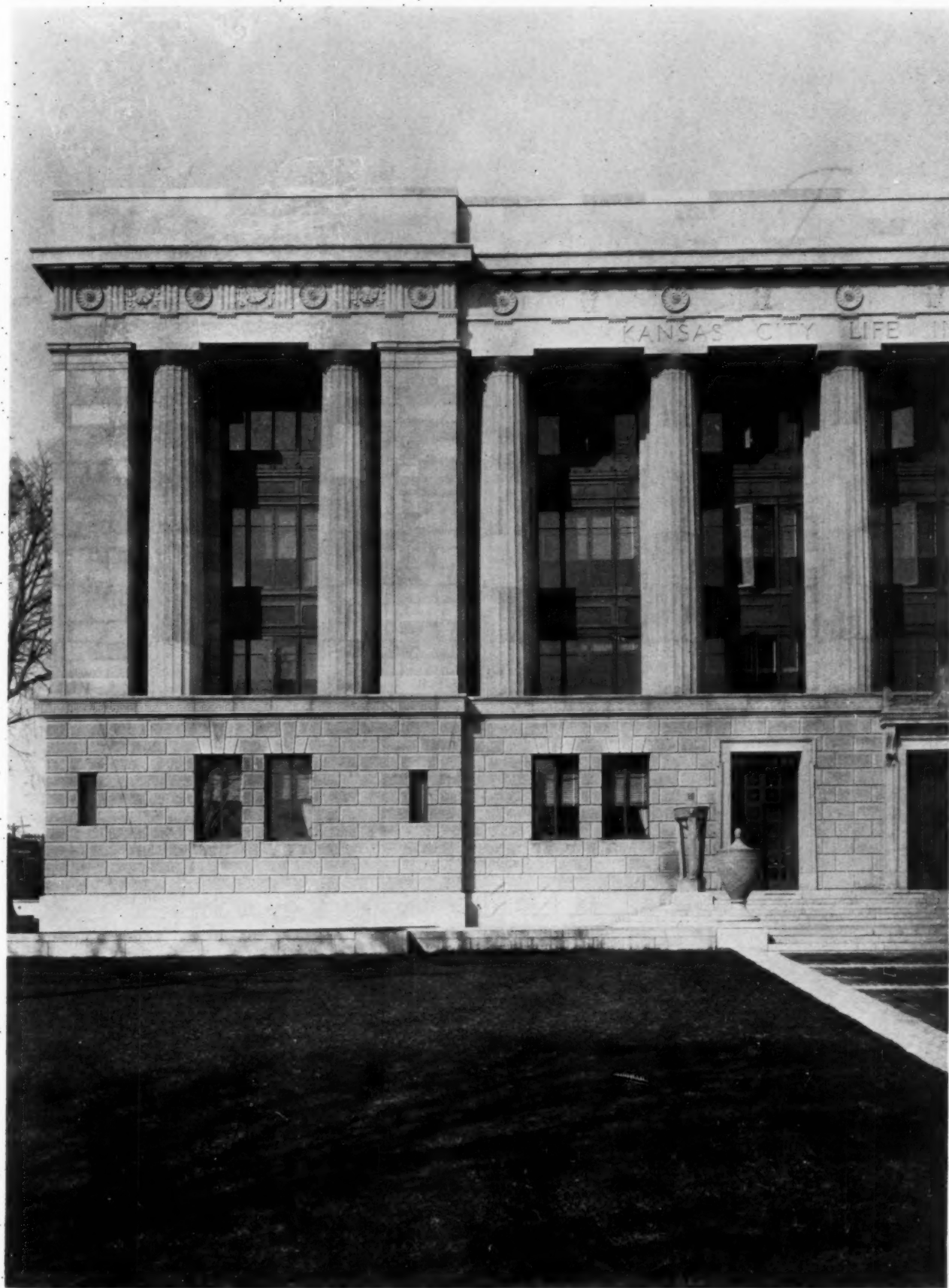
FIRST FLOOR



SECOND FLOOR

PLANS, KANSAS CITY LIFE INSURANCE COMPANY BUILDING

WIGHT & WIGHT, ARCHITECTS.



DETAIL, ENTRANCE FRONT, KANSAS CITY LIFE INSURANCE COMPANY BUILDING
WIGHT & WIGHT, ARCHITECTS

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DETAIL, ENTRANCE DOOR, KANSAS CITY LIFE INSURANCE COMPANY BUILDING
WIGHT & WIGHT, ARCHITECTS

Architectural
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PUBLIC LOBBY, KANSAS CITY LIFE INSURANCE COMPANY BUILDING
WIGHT & WIGHT, ARCHITECTS

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DETAILS, OFFICE OF THE PRESIDENT, KANSAS CITY LIFE INSURANCE COMPANY BUILDING
WIGHT & WIGHT, ARCHITECTS

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SMALL BUILDINGS

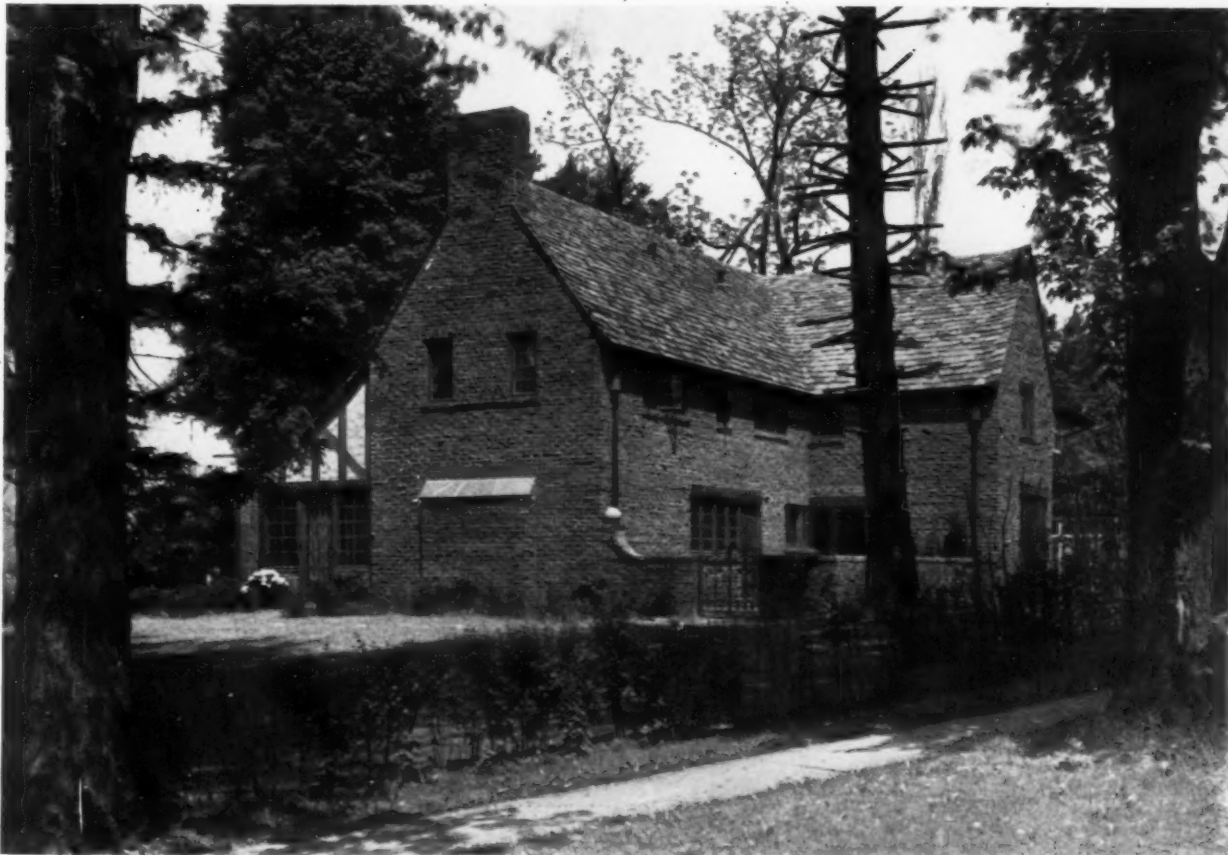
Use of Half Timber, Stucco and Brick

SHOWN IN SOME RECENT WORK OF FRANK J. FORSTER

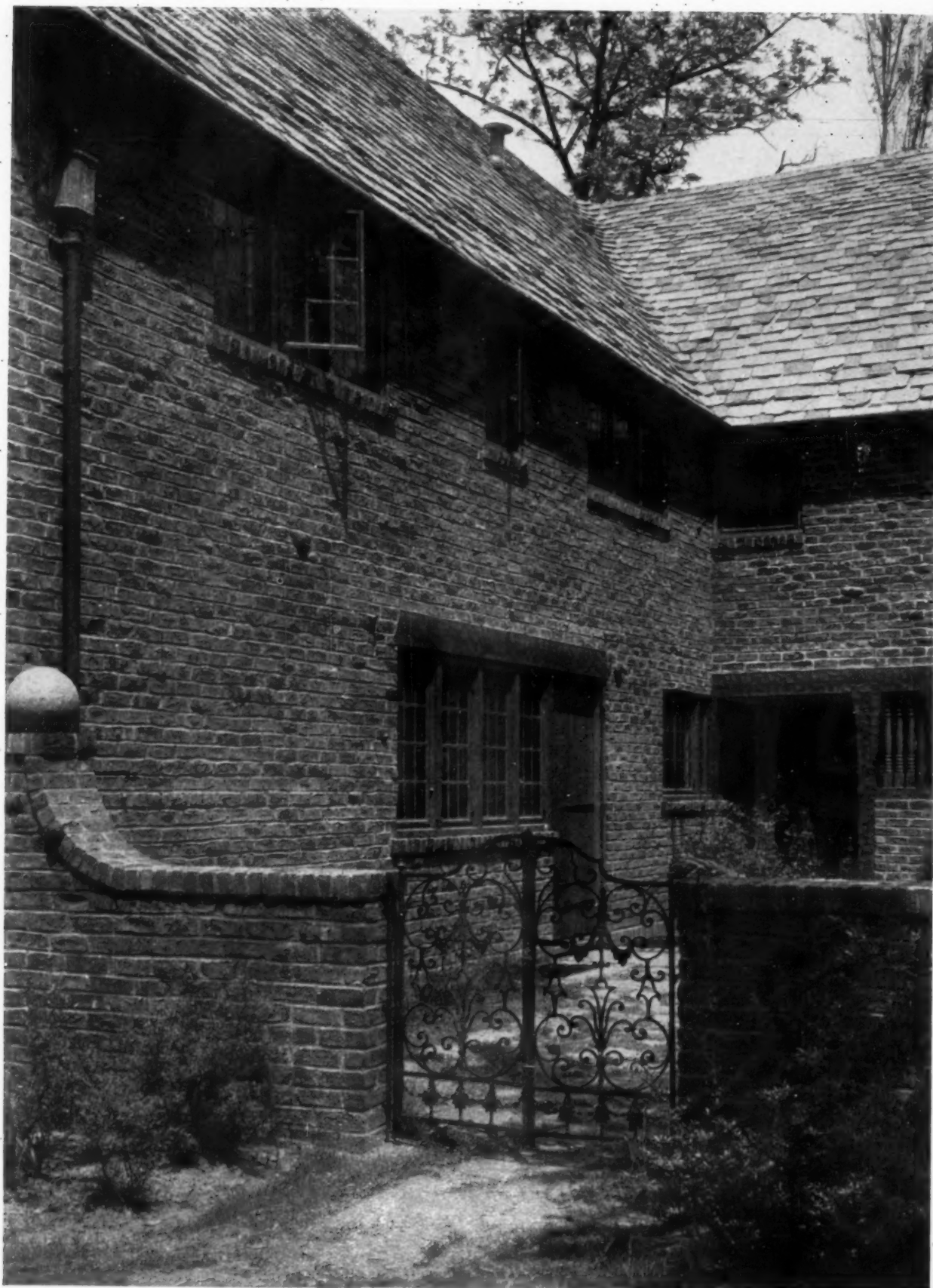
SKILL in architectural design depends largely upon the ability of the designer to select the various details and materials to be used, and to combine them in a pleasing and harmonious way. During the past few decades several attempts have been made to establish new architectural or decorative "styles;" each has attracted a certain more or less tentative following, flourished to some extent for a brief time, and then been relegated to the limbo of discarded things, leaving behind buildings or examples of decoration to serve as warnings to those who should come after, and rendering the dependence upon recognized historical forms and precedent more complete than ever. It must be now abundantly evident that no further styles are being held in reserve. Discovery of all possible forms has already been made, and while architects may be reluctant to admit it, nothing far beyond a working over and re-adaptation of well known forms is to be looked for.

In this inevitable use of forms already familiar by long use, there are several architects who have developed what might almost be called styles of their own. Possibly it is the result of study, personal predilection or perhaps of following the line of least resistance, that one architect becomes so filled with the spirit of mediæval Gothic that he plans churches which might have been built centuries ago in northern France,—or that another handles Italian and Spanish Renaissance forms with such ease and grace that one could imagine his buildings having been removed bodily from Florence or from Seville.

Frequent readers of architectural publications, or of those of which domestic building, decoration and furnishing form the subject matter, find that it is possible to "place" almost instantly a house designed in the office of Frank J. Forster. Among the marks which render comparatively simple such identification there are several which are easily recognized:



House of J. W. Day, Esq., Douglaston, N. Y.
Frank J. Forster, Architect



DETAIL OF COURTYARD
HOUSE OF J. W. DAY, ESQ., DOUGLASTON, N. Y.
FRANK J. FORSTER, ARCHITECT



DETAIL OF SUN PORCH AND ENTRANCE
HOUSE OF J. W. DAY, ESQ., DOUGLASTON, N. Y.
FRANK J. FORSTER, ARCHITECT



DETAIL, ENTRANCE TO SUN PORCH
HOUSE OF J. W. DAY, ESQ., DOUGLASTON, N. Y.
FRANK J. FORSTER, ARCHITECT



DETAIL, ENTRANCE DOOR
HOUSE OF J. W. DAY, ESQ., DOUGLASTON, N. Y.
FRANK J. FORSTER, ARCHITECT

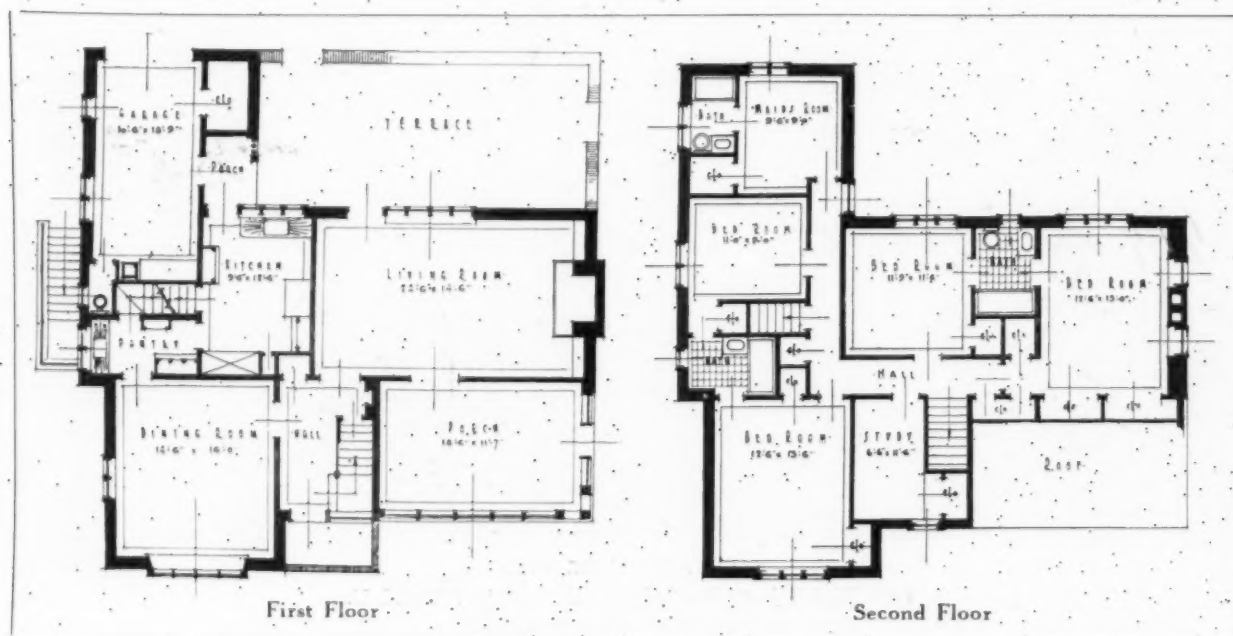


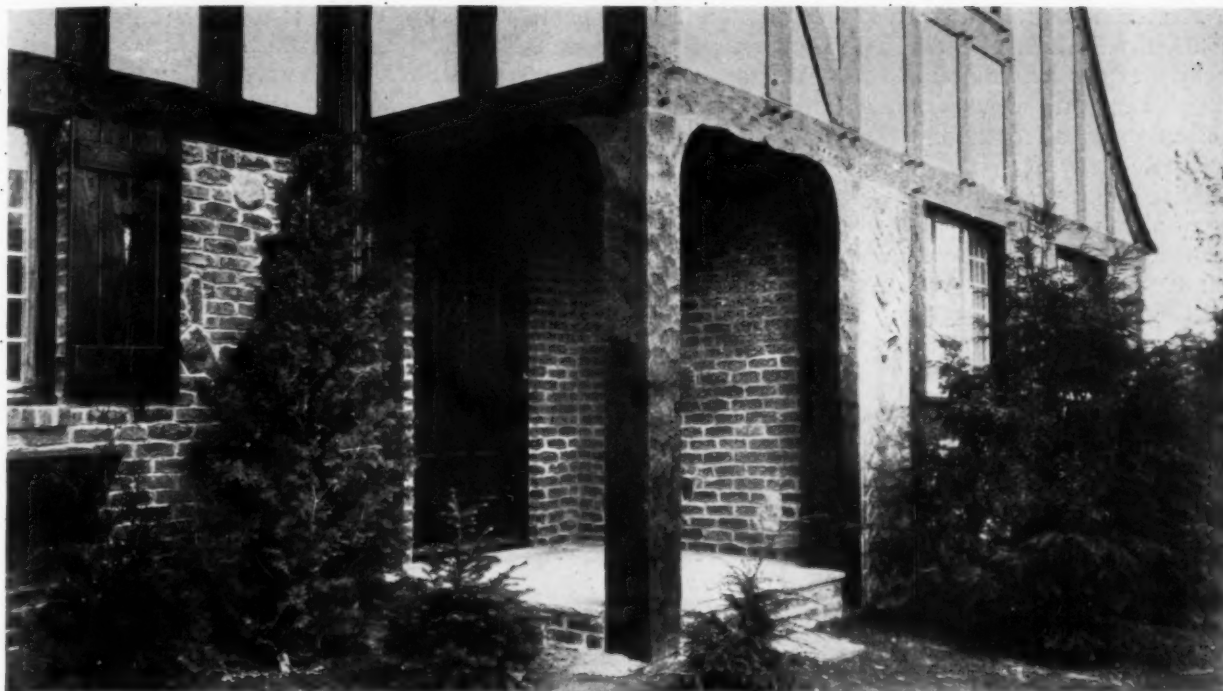
Front Elevation, House of J. W. Day, Esq., Douglaston, N. Y.
Frank J. Forster, Architect

(1) A rare skill in grouping, which creates a picturesque and architectural composition, wholly unaffected or exaggerated and involving no sacrifice in the matter of interior planning to secure this effect.

(2) A skillful handling of roof surfaces, which makes all possible use of the roof's legitimate functions in the way of contributing to house design.

(3) Excellent use of half-timber in connection with brick or stucco; which makes abundantly plain to the most casual observer the *nature* of such use,—structural and in full accord with historic building practice when a framework of timbers is filled in with brick which are either left exposed or plastered over, or else when used without intent to deceive as





Entrance Porch, House of Grant Thorn, Esq., New Rochelle, N. Y.

D. A. Summo, Architect

narrow strips of wood set into the walls of plaster or stucco to add decorative interest or to secure accent.

(4) Telling and consistent use of building materials which create contrasts, giving emphasis to the value of each,—stone in combination with shingles; brick combined with wood and stucco in the aforesaid half-timber patterns; use of clapboards, either alone or with brick or stone, and much use of slate

on roofs; the "valleys" being rounded, as the historic use of slate requires, to avoid sharp lines.

(5) Skill also in the placing of window openings, singly or else grouped, or sometimes so planned that several windows are combined with a door to form effective and graceful fenestration, the architectural value of the grouping often emphasized by use above the openings of a heavy beam, carved or hand hewn.



House of Grant Thorn, Esq., New Rochelle, N. Y.

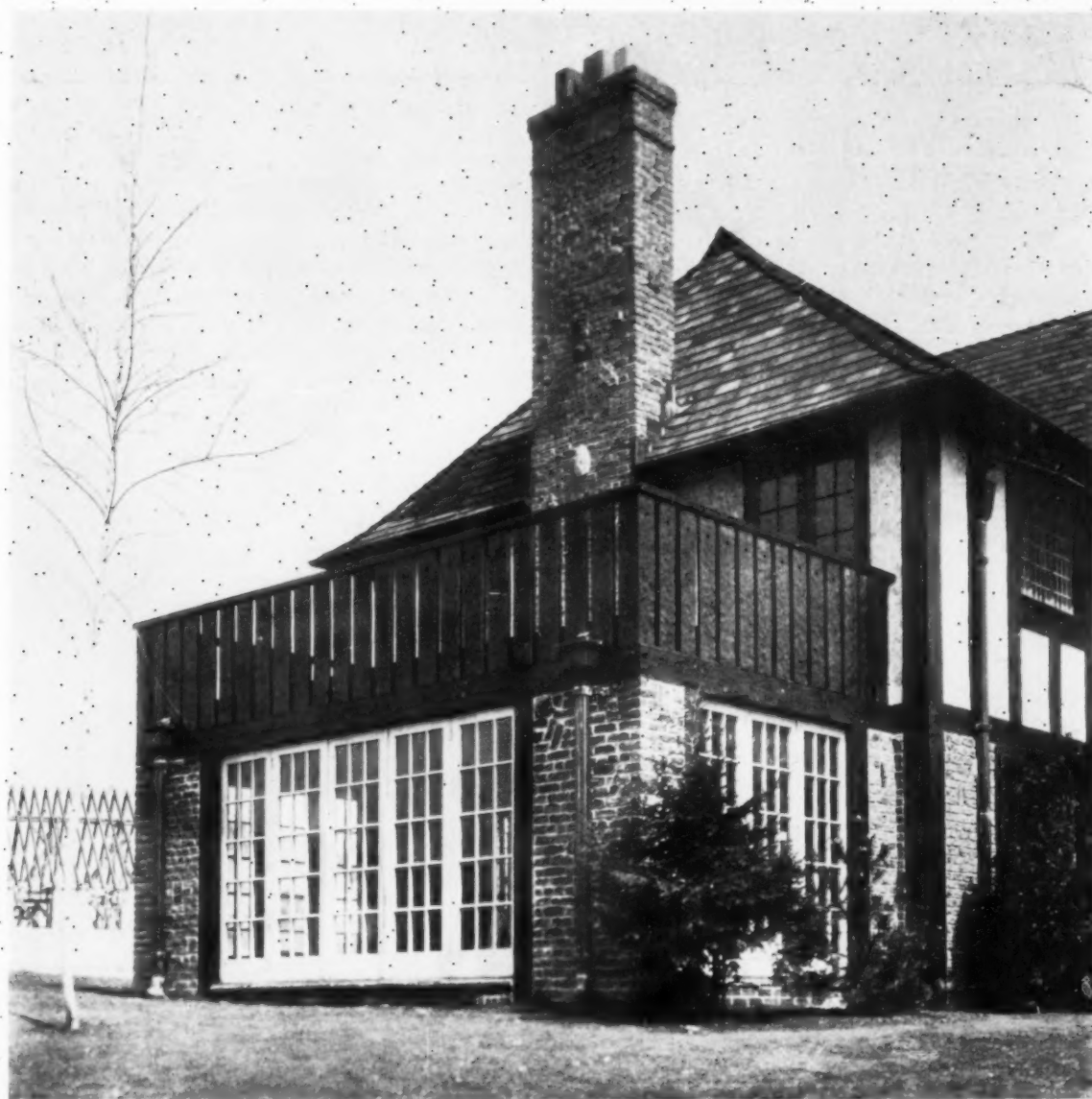
Fall in Grade Permits Successful Locating of Garage in Basement.

D. A. Summo, Architect

The characteristics enumerated here are, it will be noted, those which give to English-domestic architectural expression its strength and charm, and which clothe them with a quality which differs from that possessed by the architectural styles of any other country. Study of floor plans discloses the fact that interior arrangements possess the same English characteristics which distinguish the exteriors. This planning includes provision for a few rooms of ample sizes; low ceiled perhaps, with wide fireplaces and lighted by the casement windows, single or grouped in one way or another, which as already said, add architectural interest to the exterior as well as to the interior. This expression of strong English architectural characteristics is in no sense archaeological. Good architecture demands the adapting or fitting of a form, or style to the purpose to be served, and the retaining as far as possible of the spirit of the design while altering its expression.

In studying Mr. Forster's work there is, however,

almost invariably to be found a spiritual quality which defies analysis and which for want of a better word might be called "character" or "personality." Many an architect, given a certain quantity of building material, both could and would create a structure which would be practical and comfortable as a dwelling; and yet he might quite fail in securing that subtle and highly elusive quality which distinguishes all of Mr. Forster's work, in one degree or another, — possibly not always in the *highest* degree, since like some other architects he seems to "profit most" when he "serves best," or, expressed in other words, he does his best work when the absolute utmost must be obtained for the client's money, and when much ingenuity and considerable effort must be exercised to build the house at all. This is likely to require the omission of ornament and the reliance upon form and the use of materials in ways which emphasize beauty of line and strength of structure. Discipline is always wholesome, especially when applied to architecture.



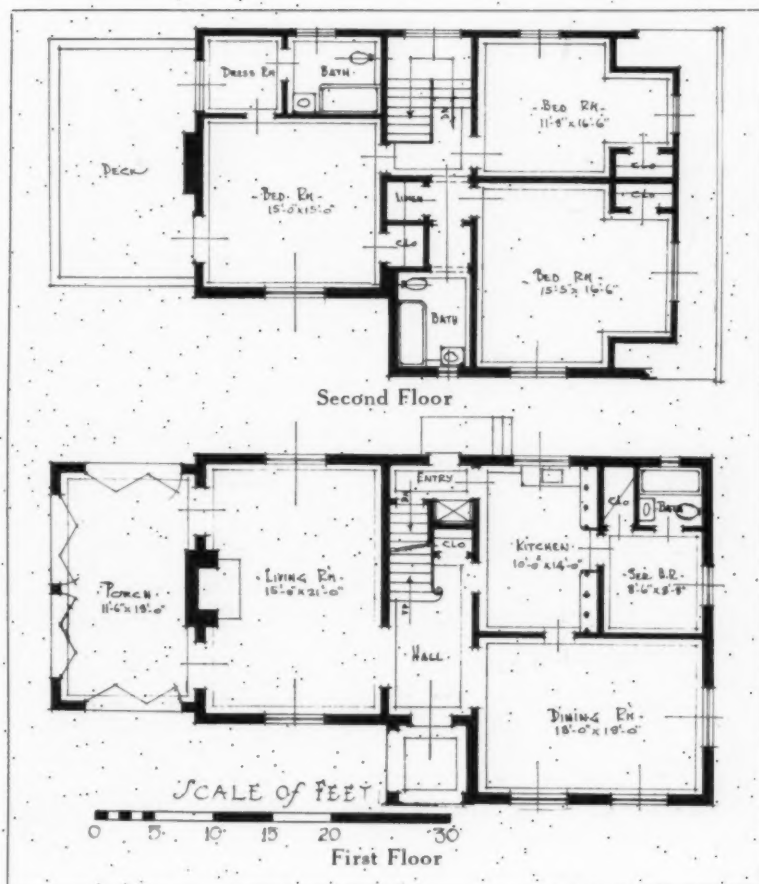
Sun Porch, House of Grant Thörn, Esq., New Rochelle, N. Y.

D. A. Summo, Architect



HOUSE OF GRANT THORN, ESQ., NEW ROCHELLE, N. Y.

D. A. SUMMO, ARCHITECT



AN interesting example of the use of half-timber patterns, stucco and brick is found in this small house recently completed at New Rochelle. The use of timber is here logically carried out, as the frame of the house is left exposed in true English fashion. Between the timbers of the frame, which were gone over by hand with an adze to give them an antique effect, stucco and brick are used. In contrast to the plain character of the plaster used between the timbers above, rough brick of interesting texture are set into the panels formed by the timbers of the first story. The variety of patterns used in these panels of brickwork adds much to the charm and quaintness of the building. Metal casements with heavily leaded small panes of glass give further distinction to the design as well as scale to the window openings, very characteristic of English work of the earlier architectural periods.

The composition of the elevations is pleasingly proportioned and shows careful study. The large sun room at one end of the house is made an integral part of the building itself by

FORUM SPECIFICATION AND DATA SHEET—56

House of Grant Thorn, Esq., New Rochelle, N. Y.; D. A. Summo, Architect

OUTLINE SPECIFICATIONS

GENERAL CONSTRUCTION:

Frame.

EXTERIOR MATERIALS:

Timber, stucco and brick.

ROOF:

Shingles.

WINDOWS:

Steel casements.

FLOORS:

Oak.

HEATING:

Hot Water.

PLUMBING:

Enameled iron fixtures. Brass piping for hot water.

ELECTRICAL EQUIPMENT:

Lighting and cooking.

INTERIOR MILL WORK:

Whitewood.

INTERIOR WALL FINISH:

Sand-finished plaster.

DECORATIVE TREATMENT:

Dark stained woodwork and natural color plaster.

APPROXIMATE CUBIC FOOTAGE:

42,375.

COST PER CUBIC FOOT:

50 cents.

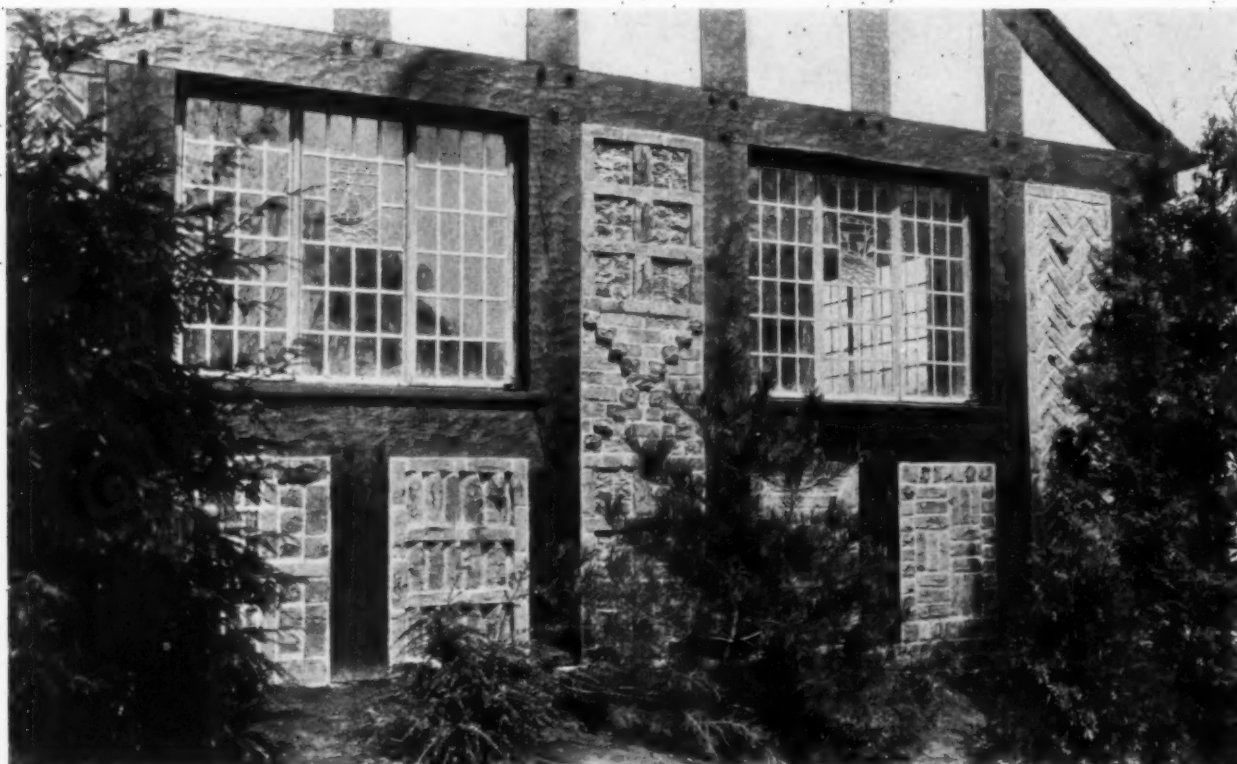
DATE OF COMPLETION:

April, 1925.

means of repeating the treatment of vertical timbers and quaint brickwork and by extending the main sill of the second floor of the house to form a base for the high plank balustrade which is the crowning feature of the porch. A tall chimney, surmounted by pots, balances the design in a pleasing manner.

The plan of this house is as simple and straightforward as is its exterior design. A center hall and stairway separate a large living room on the left from a dining room and kitchen on the right. At the rear of the kitchen is a servants' bedroom and bath, which obviates the necessity of using space

on the second floor for these rooms. On the second floor, in spite of the long slope of the principal roof, three good sized bedrooms, two baths, a dressing room and several large closets are provided. Casement windows open from one of the bedrooms onto the roof of the sun parlor, thus permitting use of this space as a sleeping porch. The high plank balustrade forms an excellent screen for this open upper porch. The location of the house on rising ground is unusually fortunate, since it permits the introduction of a garage under the house, reached from a lower level, an arrangement highly practical.

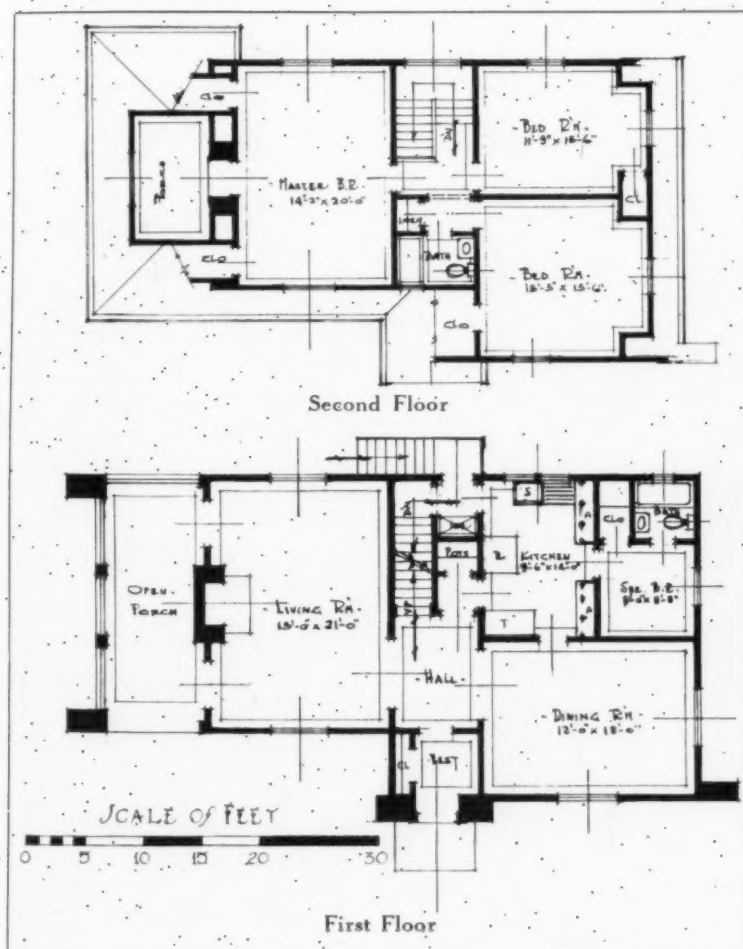


Detail of Fenestration of Dining Room Wall



HOUSE OF FRANCIS ROGERS, ESQ., NEW ROCHELLE, N. Y.

D. A. SUMMO, ARCHITECT



GIVEN the same plan and practically the same cubic contents for a small house, it is interesting to note the variations possible in exterior design. In this small house at New Rochelle the architect used a plan almost identical with that of the Grant Thorn house, illustrated upon page 233, but in exterior treatment the two houses are quite dissimilar. Instead of using half-timber forms, stucco and brick to secure a picturesque effect, following old English precedent, the exterior walls here are covered with rough-cast stucco, and the steep pitched roof is brought down to the top of the first story. Curving ridges and overhanging eaves give a pleasing, low effect. The arched entrance door as well as the double and triple windows on the entrance facade show above them interesting mouldings of cast cement. Heavy plank shutters, window boxes and a solid entrance door, all painted blue-green, are the important decorative features of the design. A small entrance porch with separate gable is well located at the center of the entrance facade. The soft wall tints of the stucco contrast pleasantly with the moss green and copper tones of the stained roof.

FORUM SPECIFICATION AND DATA SHEET—57

House of Francis Rogers, Esq., New Rochelle, N. Y.; D. A. Summo, Architect

OUTLINE SPECIFICATIONS

GENERAL CONSTRUCTION:

Frame.

EXTERIOR MATERIALS:

Stucco.

ROOF:

Shingles, stained.

WINDOWS:

Steel casements.

FLOORS:

Oak.

HEATING:

Hot water.

PLUMBING:

Enameled iron fixtures; brass piping for hot water.

ELECTRICAL EQUIPMENT:

Lighting and cooking fittings.

INTERIOR MILL WORK:

Whitewood.

INTERIOR WALL FINISH:

Sand finish plaster.

DECORATIVE TREATMENT:

Dark stained wood and tinted walls.

APPROXIMATE CUBIC FOOTAGE:

39,750.

COST PER CUBIC FOOT:

50 cents.

DATE OF COMPLETION:

December, 1924.

shingles. Green firs and spruces prevent monotony of bare, unbroken wall surfaces, and several slender birches give an informal accent to the small front lawn, at the side of which a sloping drive leads to a garage located under the rear portion of the house.

The plan shows rooms slightly larger than those in the Grant Thorn house. The arrangement of the closets and the kitchen entry at the rear of the front hall is compact and practical, involving no waste space. A servant's bedroom and bath, with good sized closet, are included, just as they are in the Thorn house. The second floor also shows three good sized master bedrooms, but in this case only

one bath is included. More space is lost here than on the second floor of the Thorn house, on account of the deep overhanging of the roof. Space under the eaves, however, is utilized for closet and storage purposes. Part of this space, which might be almost useless because of the roof's overhang, has been used for an upper floor porch, probably a sleeping porch, since it is reached only from one of the bedrooms.

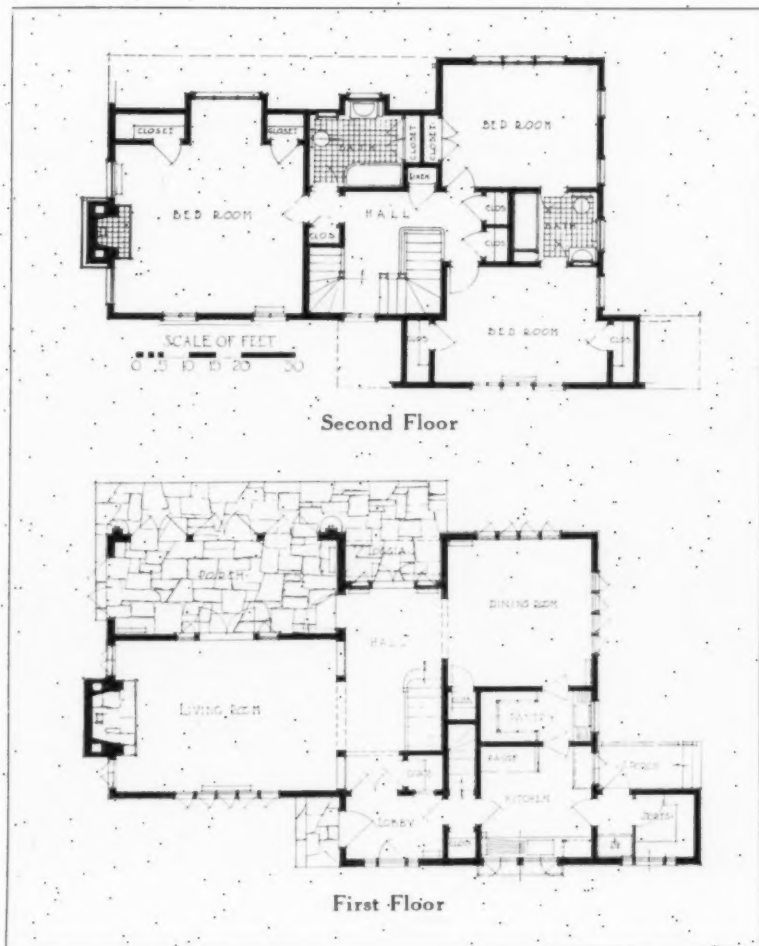
The house, upon the whole, is an excellent example of the American following of what is often termed the "modern English" domestic style, a type which is well adapted to present-day American needs, and which may be given interesting treatment.



Detail of Porch and Garden Facade



HOUSE OF MISS EDITH BOGUE, MONTCLAIR, N. J.
CLIFFORD C. WENDEHACK, ARCHITECT



THIS house, which was built three years ago, is a model of English charm. Here rough-cast stucco with half-timber design on the front of the second story, combined with heavy siding under the front gable, gives individuality and distinction. Louver openings under the peaks of the main roof give ventilation to the unfinished attic space. The windows are spacious and well placed, giving well lighted, sunny interiors. In this house the living porch is really a continuation of the living room, being built into the house itself instead of projecting from the end elevation. This location of the porch saves money, and tends to make a more compact plan. The tall exterior chimney of red brick, capped with stucco and chimney pots, forms a strong motif at the end of the house, balancing in a measure the large front gable, the long, low slope of which adds much to the picturesque quality of the design. Arched windows on either side of the lower story of this gable give a pleasingly balanced and symmetrical effect to the building. The plan is unusually well studied and worked out. The front entrance lobby connects not only with the main hall of the house but also through an

FORUM SPECIFICATION AND DATA SHEET—58

House of Miss Edith Bogue, Montclair, N. J.; Clifford C. Wendehack, Architect

OUTLINE SPECIFICATIONS

GENERAL CONSTRUCTION:

Frame.

EXTERIOR MATERIALS:

Stucco, timbers and clapboards.

ROOF:

Shingles, stained.

WINDOWS:

Metal casements.

FLOORS:

Red oak.

HEATING:

Steam.

PLUMBING:

Enameled iron fixtures with brass piping.

ELECTRICAL EQUIPMENT:

Lighting, cooking and laundry apparatus.

INTERIOR MILL WORK:

Cypress, stained.

INTERIOR WALL FINISH:

Rough plaster.

DECORATIVE TREATMENT:

Stained wood and painted walls.

COST PER CUBIC FOOT:

55 cents.

YEAR OF COMPLETION:

1922.

entry with the cellar stairs and kitchen. The latter is purposely located at the front of the first floor, making it possible to place the dining room adjacent to the loggia and porch at the rear. A pantry separates the dining room and kitchen, and ample space for stores and ice box is provided adjacent to the servants' porch. The main stairway, which continues up to the third floor, is located at one side of the wide entrance hall. The second floor has three master bedrooms, two large baths, and ample closet space. The location of one of the baths over the pantry makes for economy in the plumbing lay-

out. On the whole, the plans of both the first and second floors are original and conveniently worked out. Study of the exterior views of the house will prove that a considerable part of its charm is due to the use at the windows of casements of metal which open out. Casements, of course, heighten the English character of the building, which looks its best with evergreens and shrubbery massed against the stucco-covered walls, and added contrast is gained by the stucco walls in connection with the stained shingles of the roof. The house is representative of the excellent work of its kind now being done.



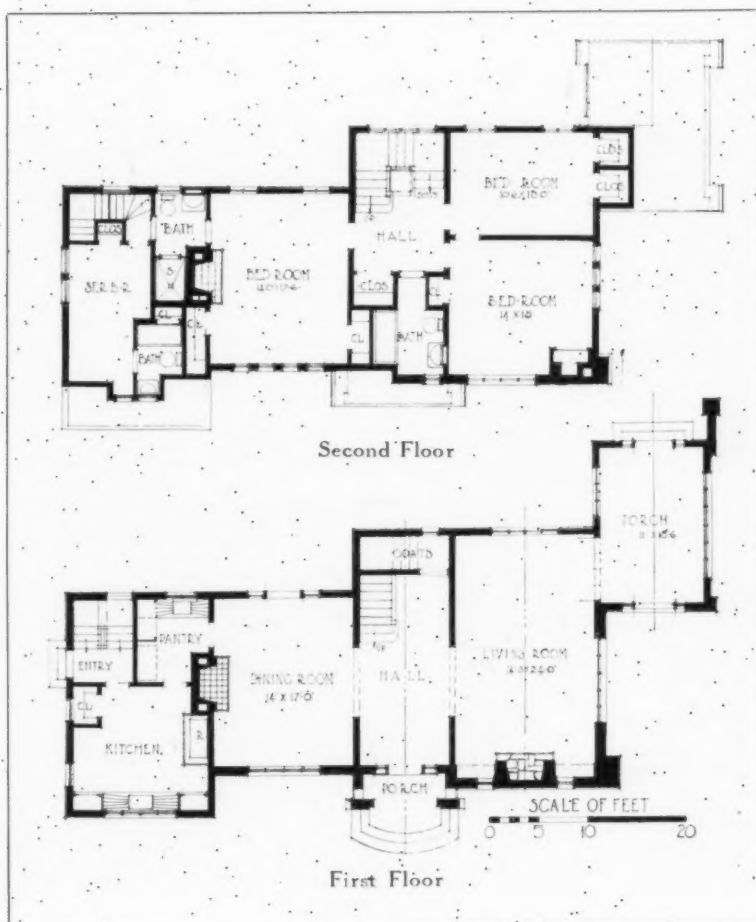
Detail of Entrance.



Entrance to Dining Room



HOUSE OF FRANK NOBBE, ESQ., ST. ALBANS, N. Y.
CLIFFORD C. WENDEHACK, ARCHITECT



AMONG the recent examples of small houses built in the English style, in which half-timber forms, stucco and brick have been successfully combined, this house on Long Island is excellent. Located close to the sidewalk, on a street of a suburban town, the living room and dining room have been so placed that each room extends entirely through the house, making it possible to have casement doors at the rear opening onto a small garden. This plan is particularly good for houses located near a street, since it makes it possible for the occupants to enjoy the privacy of a garden at the rear. The kitchen here is located on the street, with the service entrance at the end of the house. Brick, which is used for part of the first story wall, is carried up to the peak of the front gable which faces the street. This gable, with its entrance porch on the first floor, and with its long sloping roof line, makes a pleasant break in the length of the front façade. Half-timber design is successfully introduced on the second floor under the over-hanging roof; and rough-cast stucco completes the remaining wall surfaces. The brick chimneys, de-

FORUM SPECIFICATION AND DATA SHEET—59

House of Frank Nobbe, Esq., St. Albans, N. Y.; Clifford C. Wendehack, Architect

OUTLINE SPECIFICATIONS

GENERAL CONSTRUCTION:

Brick and wood frame, covered with stucco.

EXTERIOR MATERIALS:

Wood, stucco and brick.

ROOF:

Variegated slate.

WINDOWS:

Metal casements.

FLOORS:

Oak and tile.

HEATING:

Steam.

PLUMBING:

Porcelain fixtures in master baths; brass piping for hot water.

ELECTRICAL EQUIPMENT:

Lighting and laundry equipment.

INTERIOR MILL WORK:

Oak.

INTERIOR WALL FINISH:

Sand-finished plaster.

DECORATIVE TREATMENT:

Stained plaster and wood.

COST PER CUBIC FOOT:

63 cents.

YEAR OF COMPLETION:

1923.

signed after the English style, give an added note of interest to the design. The plan is convenient and practical in layout, showing a central hall with coat room under the stairs at the end opposite the entrance. Fireplaces add to the architectural interest of both living and dining rooms. A large enclosed porch, which is placed adjacent to the living room, is made an integral part of the design by carrying down over it the long slope of the roof. The pantry, service stairs and entrance, together with the kitchen, occupy the extreme end of the first floor. The servants' bedroom and bath are

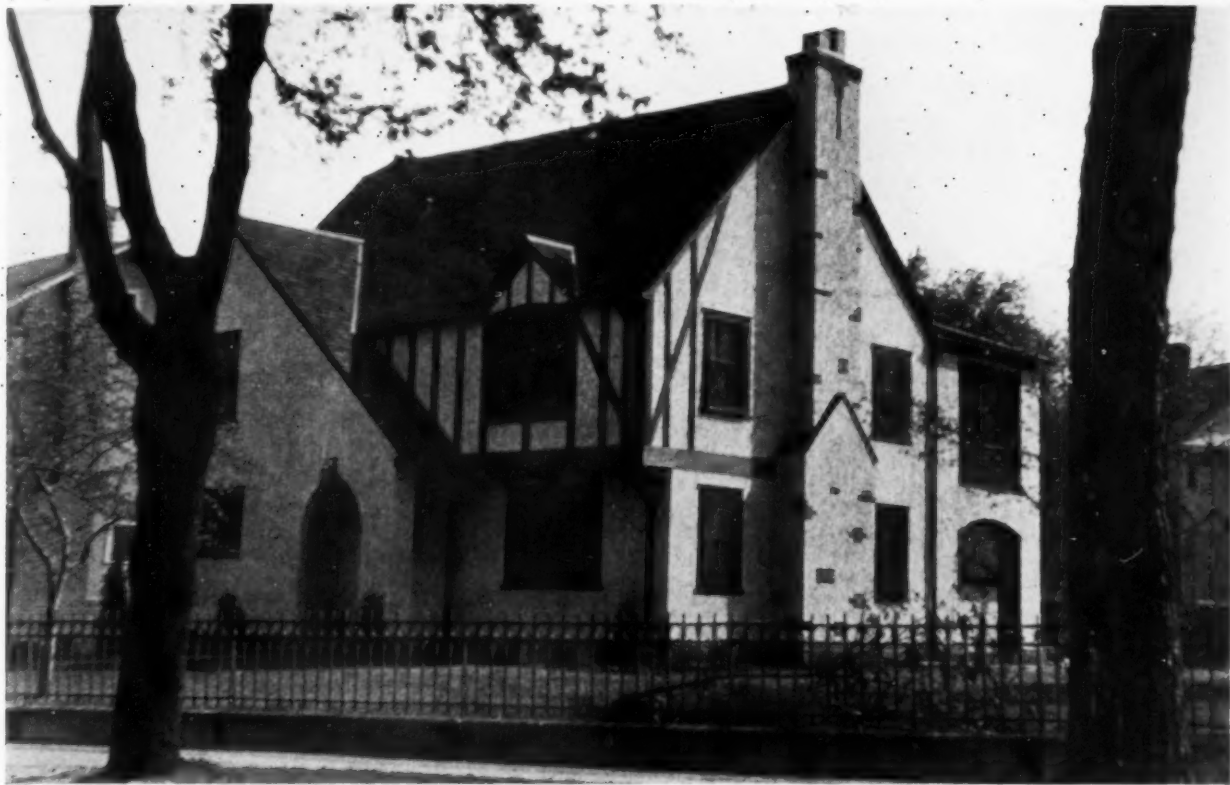
above the kitchen. From the service stairway access is had through one of the master baths to the rest of the second floor, where three bedrooms and two baths are well located. Special attention might be drawn to the arrangement of the servants' room. In several of the small houses shown in these pages maids' rooms and baths are provided adjoining the kitchens. Desirable as this arrangement is in many respects, it makes heavy demands upon valuable first floor area. In Mr. Nobbe's house the same privacy is had by placing them *over* the kitchen in what is in effect a separate wing, an excellent and practical plan.



Detail of Entrance.



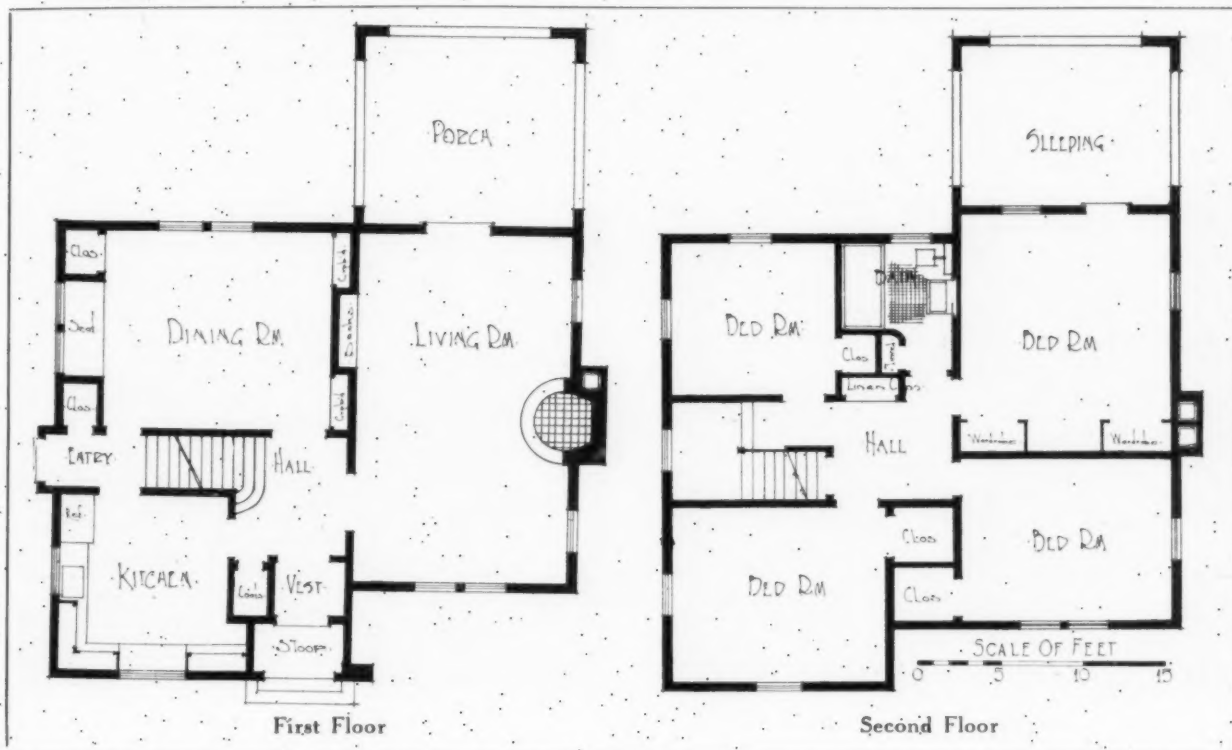
The Main Stairway



HOUSE OF PAUL GREIG, ESQ., ST. PAUL
KENNETH P. WORTHEN, ARCHITECT

It is interesting and gratifying to note that good examples of the simple adaptation of Elizabethan architecture in modern small American houses are not restricted to any one locality. In St. Paul three small houses in this style have recently been completed, illustrations and plans of which are included

in this issue of THE FORUM. This particular house, which was built for Paul Greig, shows an interesting elevation in which rough-cast stucco is relieved on the second story by half-timber design. The kitchen is fittingly placed at the front of the house, making it possible to locate the living-room, dining room and



FORUM SPECIFICATION AND DATA SHEET—60

House of Paul Creig, Esq., St. Paul; Kenneth P. Worthen, Architect

OUTLINE SPECIFICATIONS

GENERAL CONSTRUCTION:

Frame.

EXTERIOR MATERIALS:

Wood and stucco in half-timber patterns.

ROOF:

Shingles stained in varying shades of green, red and yellow.

WINDOWS:

Wood, casements and double-hung.

FLOORS:

Oak throughout.

HEATING:

Hot water.

PLUMBING:

Porcelain fixtures, and brass piping for hot water.

ELECTRICAL EQUIPMENT:

For lighting and cooking.

INTERIOR MILL WORK:

Oak.

INTERIOR WALL FINISH:

Light, sand-finished plaster.

INTERIOR DECORATIVE TREATMENT:

Stained woodwork and natural toned plaster.

APPROXIMATE CUBIC FOOTAGE:

28,000.

COST PER CUBIC FOOT:

36 cents, including a separate, single-car garage.

DATE OF COMPLETION:

September 1, 1925.

porch at the back, facing the garden. Above the porch is an outdoor sleeping room, which connects with the principal bedroom. Four bedrooms and one bath occupy the second floor. The small corner bedroom at the rear of the house is intended for a servant, and a servant's bathroom is in the basement.

Like many another innovation in domestic architecture, the occasional placing of the kitchen at the front of a house has now been accepted and its ad-

vantages are realized. In this instance the advantages of the plan are quite apparent, for there is afforded back of the house opportunity for a garden, into which the windows of living and dining rooms face and which the veranda overlooks. Placing the kitchen so that it faces the street need not be objectionable, particularly when, as in this instance, the service entrance which leads to it is at the side, and easily screened from being viewed from the street.



Fireplace in Living Room



Dining Room Cupboard

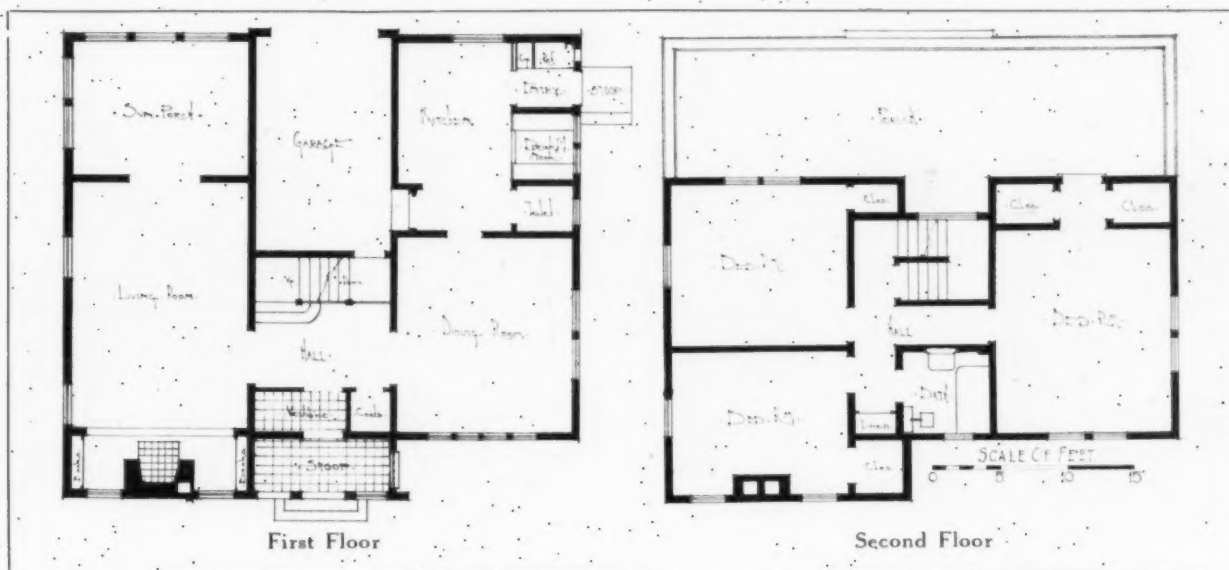


HOUSE OF THEODORE CHRISTIENSON, ESQ., ST. PAUL
KENNETH P. WORTHEN, ARCHITECT

A HIGH pitched tile roof, a triple-arched entrance porch and a long sloping roof on the front gable are the prominent features of this simple English house. Half-timber design relieves the monotony of the rough-cast stucco on the walls of the second story, and window shutters emphasize the fenestration of the front gable. An interesting feature of the plan is the symmetrical layout of the rooms on either side of a small entrance hall, at the rear of which, included within the walls of the house, is a small garage. No pantry separates the kitchen and dining room, but a small breakfast al-

cove opens off the kitchen. This is a well planned house for a small family not worried by the servant problem. The second floor provides three bedrooms.

Examination of the plans of this house shows at once that several departures from the usual planning of small or moderate sized houses have been made. The planning of the living room so that it opens through wide doors into the sun porch at one end and is extended at the opposite end by the fireplace alcove makes what is in effect one room, which might seem to be a trifle long for its width, which is about 13 feet. Windows are on three sides of the room.



FORUM SPECIFICATION AND DATA SHEET—61

House of Theodore Christenson, Esq., St. Paul; Kenneth P. Worthen, Architect.

OUTLINE SPECIFICATIONS

GENERAL CONSTRUCTION:

Frame, walls, and garage of hollow tile.

EXTERIOR MATERIALS:

Half-timber and stucco.

ROOF:

Tile.

WINDOWS:

Wood casements.

FLOORS:

Oak downstairs; metal upstairs.

HEATING:

Hot water.

PLUMBING:

Enameled iron fixtures.

ELECTRICAL EQUIPMENT:

Heating and cooking.

INTERIOR MILL WORK:

Oak stained.

INTERIOR WALL FINISH:

Sand-finished plaster.

INTERIOR DECORATIVE TREATMENT:

Woodwork and plaster painted.

APPROXIMATE CUBIC FOOTAGE:

36,500.

COMPLETE COST PER CUBIC FOOT:

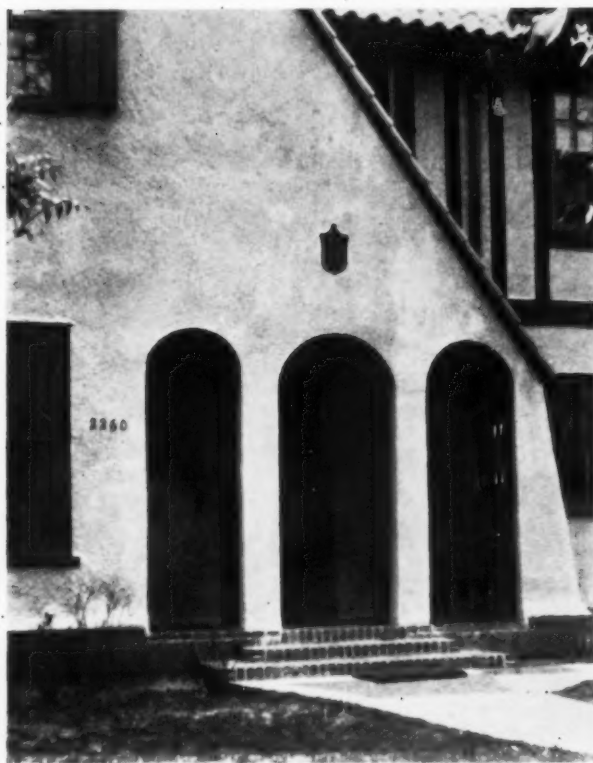
36 cents.

DATE OF COMPLETION:

January 1, 1925.

A much more striking innovation, however, is the arrangement of the garage so that it is surrounded upon three sides by the house itself. Use of such valuable area for a garage may be justified, however, particularly if the owner cares for and drives the car himself. Placing the garage in this position probably solves the problems of heating and lighting and the supplying of hot water. A glance at the specifications will show that the architect planned the garage with walls of tile, and the ceiling is fireproof, necessary no doubt to comply with local building laws governing fireproofing of garage construction.

The pleasing appearance of the exterior of the house is due in large measure to the consistent use of materials. One frequently wonders that tile are not being more widely used for roofing, particularly when the walls of a building are built of stucco. All over the world stucco houses are roofed with tile, and there seems to be a certain agreement, historical as well as architectural, between the two. Added to the use of appropriate materials, the house shows an interesting breaking up of the main facade. The little entrance porch, with its three arches, being really a loggia, the depth giving a certain shadow.



Entrance Detail



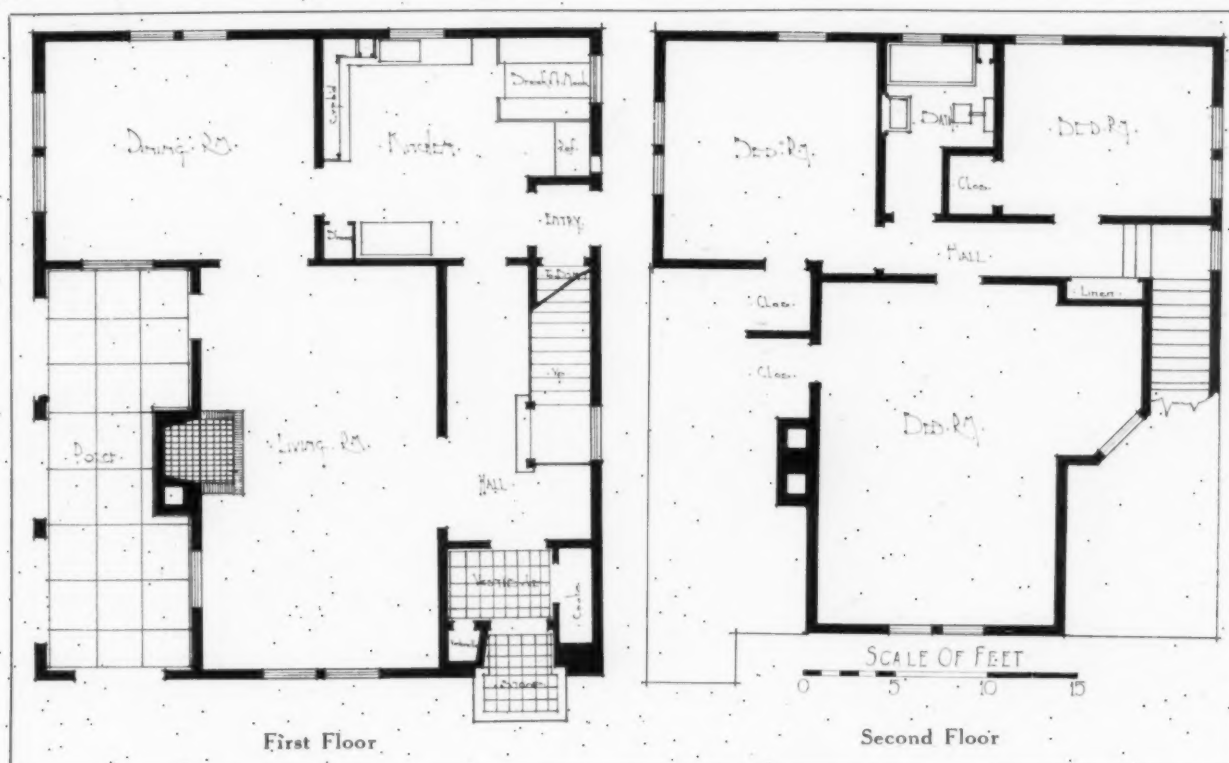
Fireplace in Living Room



HOUSE OF F. W. BUTLER, ESQ., ST. PAUL
KENNETH P. WORTHEN, ARCHITECT

LOCATED among fall trees, this stucco house shows an interesting balance in design, not lacking, however, in picturesque quality. Rough-cast stucco is used throughout, relieved on the front gable by half-timber design. Situated close to the

ground, red brick is used for the top of the foundation walls above grade, as well as for the entrance steps. The long, sloping lines of the roof of the front part of the house are carried down over the projecting living porch on one side and over the



FORUM SPECIFICATION AND DATA SHEET—62

House of F. W. Butler, Esq., St. Paul; Kenneth P. Worthen, Architect

OUTLINE SPECIFICATIONS

GENERAL CONSTRUCTION:

Frame.

EXTERIOR MATERIALS:

Frame and stucco.

ROOF:

Cedar shingles.

WINDOWS:

Wood casements and double-hung sash.

FLOORS:

Oak throughout.

HEATING:

Hot water.

PLUMBING:

Enameled iron fixtures.

ELECTRICAL EQUIPMENT:

Lighting and cooking.

INTERIOR MILL WORK:

Oak.

INTERIOR WALL FINISH:

Smooth and rough plaster.

INTERIOR DECORATIVE TREATMENT:

Stained and painted woodwork; painted walls.

APPROXIMATE CUBIC FOOTAGE:

32,500.

COST PER CUBIC FOOT:

39 cents, including a separate two-car garage.

DATE OF COMPLETION:

February 1, 1925.

entrance porch on the other. The end of the living room, which comes between these two porches, is brought out flush with them and is separately roofed. This unusual treatment is pleasingly proportioned and successfully carried out, indicating one of the many variations possible even in a small, rectangular

house. It gives a certain variety to the building.

The plan of the first floor shows an entrance vestibule and stair hall at one side, instead of in the center, making it possible to have a spacious living room with adjoining porch, opening out of which is a dining room at the rear of the house, affording

privacy and a pleasant view of the surrounding woods. The kitchen is large, and a breakfast alcove is included. The second floor has one large and two small bedrooms, with one bath. Here the closet space seems inadequate, as closets located under sloping roofs seldom provide adequate height for hanging space. For a non-servant *menage*, however, the plan is compact, convenient and practical.

One interesting little detail which adds a certain character to the building might be noted. At the main entrance by placing at each side of the door and within the vestibule a small closet (one for coats and one for umbrellas) it has been possible to simulate the appearance of a thick wall of stucco or adobe, which naturally has the effect of adding a note of solidity to the structure, particularly pleasing in connection with the brick steps and pavement of the platform before the door.

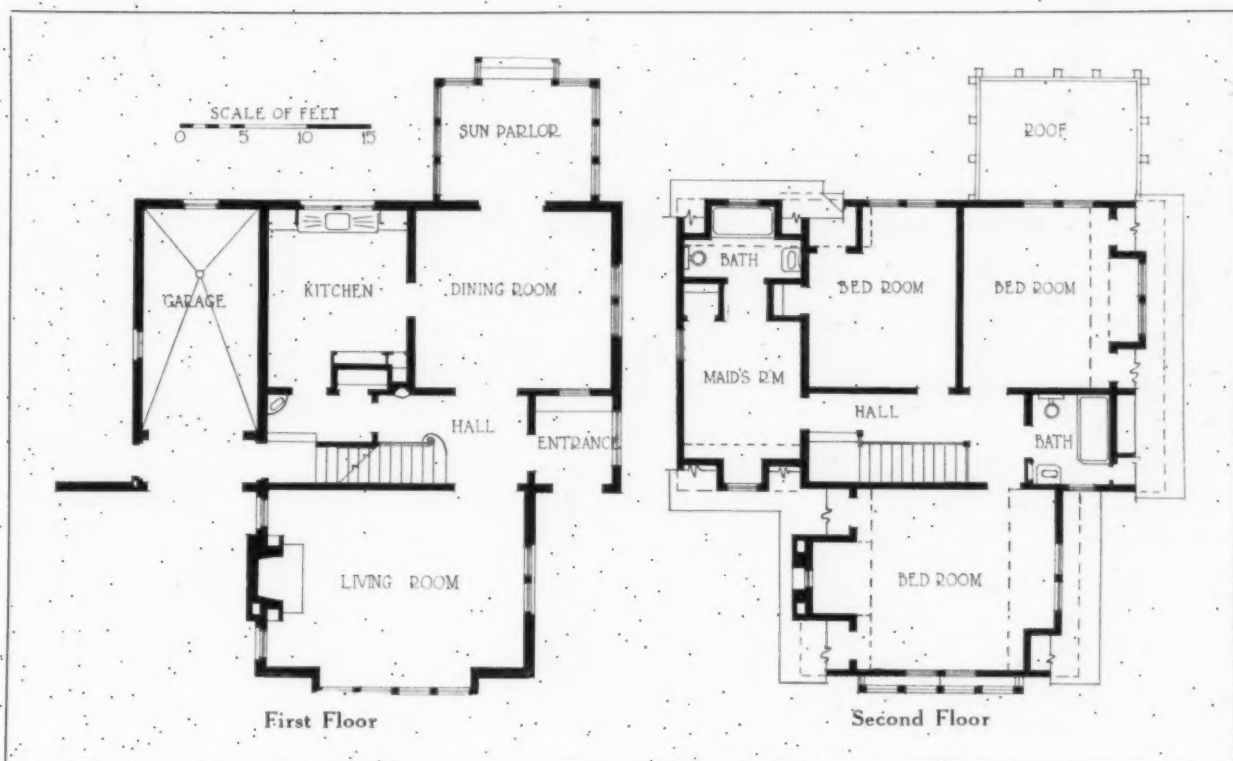
It is always wise to place the veranda at a part of the house where it will not be a part of the entrance. Here the veranda fills the area formed by the projection of the dining room beyond the body of the house, and it is reached by a casement window or door from the living room. The plan of the veranda suggests its being enclosed in winter and made a practical sun porch.



The Main Entrance.



HOUSE OF W. C. McDONALD, ESQ., WINNETKA, ILL.
WILLIAM CAMPBELL WRIGHT, ARCHITECT



FORUM SPECIFICATION AND DATA SHEET—63

House of W. C. McDonald, Esq., Winnetka, Ill.; William Campbell Wright, Architect

OUTLINE SPECIFICATIONS

GENERAL CONSTRUCTION:

Frame.

EXTERIOR MATERIALS:

Timber, stucco and rough common brick.

ROOF:

Redwood shingles.

WINDOWS:

Wood, double-hung, and casements.

FLOORING:

Red oak, stained brown.

HEATING:

Hot water.

PLUMBING:

Porcelain fixtures and brass piping.

ELECTRICAL EQUIPMENT:

Lighting and cooking.

INTERIOR MILL WORK:

Red gum trim and birch doors.

INTERIOR WALL FINISH:

Plain, rough plaster.

DECORATIVE TREATMENT:

Walnut stained trim downstairs; enamel upstairs.

APPROXIMATE CUBIC FOOTAGE:

40,000.

COST PER CUBIC FOOT:

45 cents.

DATE OF COMPLETION:

December, 1924.

ONE of the most attractive houses recently built in which wood, stucco and brick in half-timber patterns have been successfully combined is this small house in a suburb of Chicago. It is a pity that so attractive a small house should not have more ground about it, since the close proximity of commonplace architecture would obscure it were it not so remarkably good that it seems to stand by itself.

The plan is as interesting and carefully studied as is the exterior. The living room is so placed that it has windows on three sides,—a very desirable fea-

ture. Through an attractive entrance porch the main hall is reached, running through the house, with a door at the rear leading to the garage. From the dining room, which is nearly square, casement doors open into a sun parlor or breakfast porch. The kitchen is spacious and well-supplied with closets and cabinets. On the second floor are three master bedrooms and bath, and one maid's room and bath, located above the garage. The pitch of the roof has been made sufficiently steep, so that but comparatively little floor space is lost in the second story rooms.



Entrance to Garage



Living Room Gable

INTERIOR ARCHITECTURE

✓ The Imperial Theater at Fontainebleau

By SAMUEL E. GIDEON

UPON entering the main court to Fontainebleau Palace one would never suspect that the somewhat monotonous, three-storied wing on the right, built by Louis XV, houses the interesting little theater of Napoleon III. There is nothing on the exterior to call attention to the fact, since the theater was built within the walls of the original structure as late as 1854. The gallery was declared unsafe by the Palace architect and, except for the practice of students of the opera in the *Conservatoire Americaine*, the theater is no longer in use or open to the public. The brief historical notes given here are taken from the documents of the Palace, which have been carefully preserved.

This pleasant room for small theatrical productions is located on the site of the west part of the ancient *Galerie d'Ulysse*, which Louis XV ordered to be destroyed in 1737 to make room for the Louis XV wing, designed for the use of the Princes. Napoleon I assigned this wing to the Military School from 1803 to 1809. The theater, built by the architect Lefuel, was finished in 1856 at the very moment the room of the *ancienne comédie*, located in the *Cour de la Fontaine*, was destroyed by fire. Decorated with extraordinary taste in the style of Louis XVI, the general scheme of the room is in white stucco and gold, animated with garlands of foliage. The domed ceiling, painted by Ch. Voillemot, is a composition of two allegorical figures, "Music and Poetry," surrounded by cupids. The rail of the first balcony is decorated with flowers, foliage and *treillis*, the work of Clement in the year 1854.

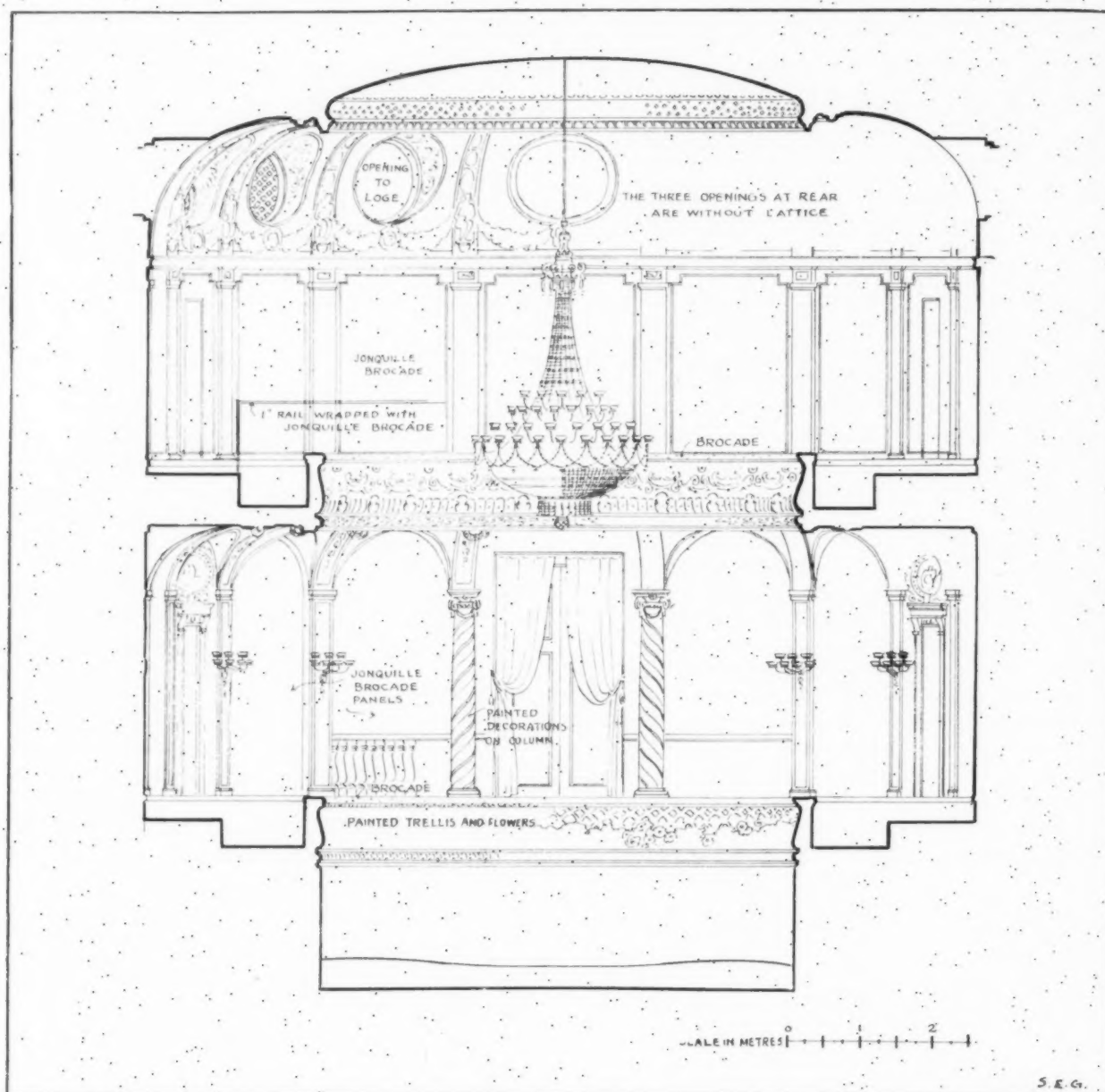
The imperial *loge*, situated at the center of the

first balcony, was decorated by Mole and Rube in jonquille satin with gilt buttons. The three adjoining parlors are decorated in blue. The *parterre* was reserved for officers and civil functionaries, all in uniform. The first balcony, also upholstered in jonquille satin with gilt buttons, was reserved for the Emperor and Empress and members of their Court. The second balcony, designed like the lower, was reserved for invited guests. The third balcony was a ring of *loges* partially screened by gilded wooden *treillis*. These were also reserved for guests. The furniture of the balconies is in the style of Louis XVI, and the woodwork is decorated in white and gold. The theater can seat 430 persons.

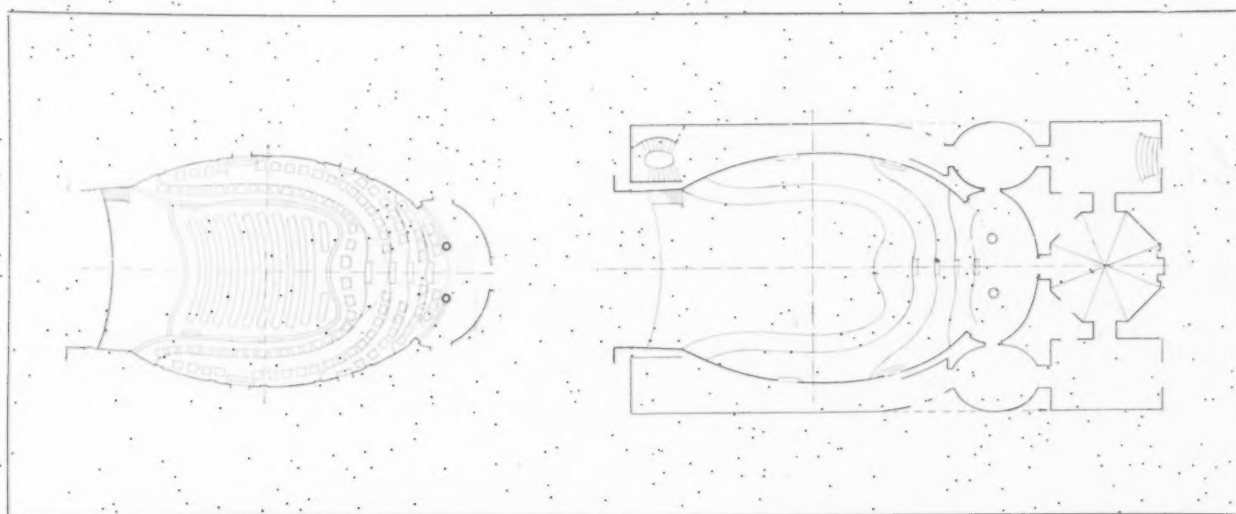
The formal opening of the theater took place on May 18, 1857, in the presence of the Grand Duke Constantine of Russia; the Emperor Napoleon III, and the Empress Eugenie and their entire Court. The actors of the *Theatre Français* played *Le Mari a la Campagne* ("The Husband in the Country") and *Une Tempete dans un Verre d'Eau* ("A Tempest in a Glass of Water") by Leon Gozlaw. After the performance the Emperor called the artists, Regnier, Delaunay, and Mmes. Fix and Figeac, and congratulated them, and entertained them and all the artists at dinner in the *Galerie Henri II*. On this occasion the Empress wore a gown of white brocade and a diadem and necklace of sapphires, which she treasured above all her jewels. The theater was frequently used while the Court was at Fontainebleau, from 1857 to 1868. The theater stands as a pathetic monument to the magnificent days of Napoleon, Eugenie, and the French Empire.



Detail of Court and Grand Staircase



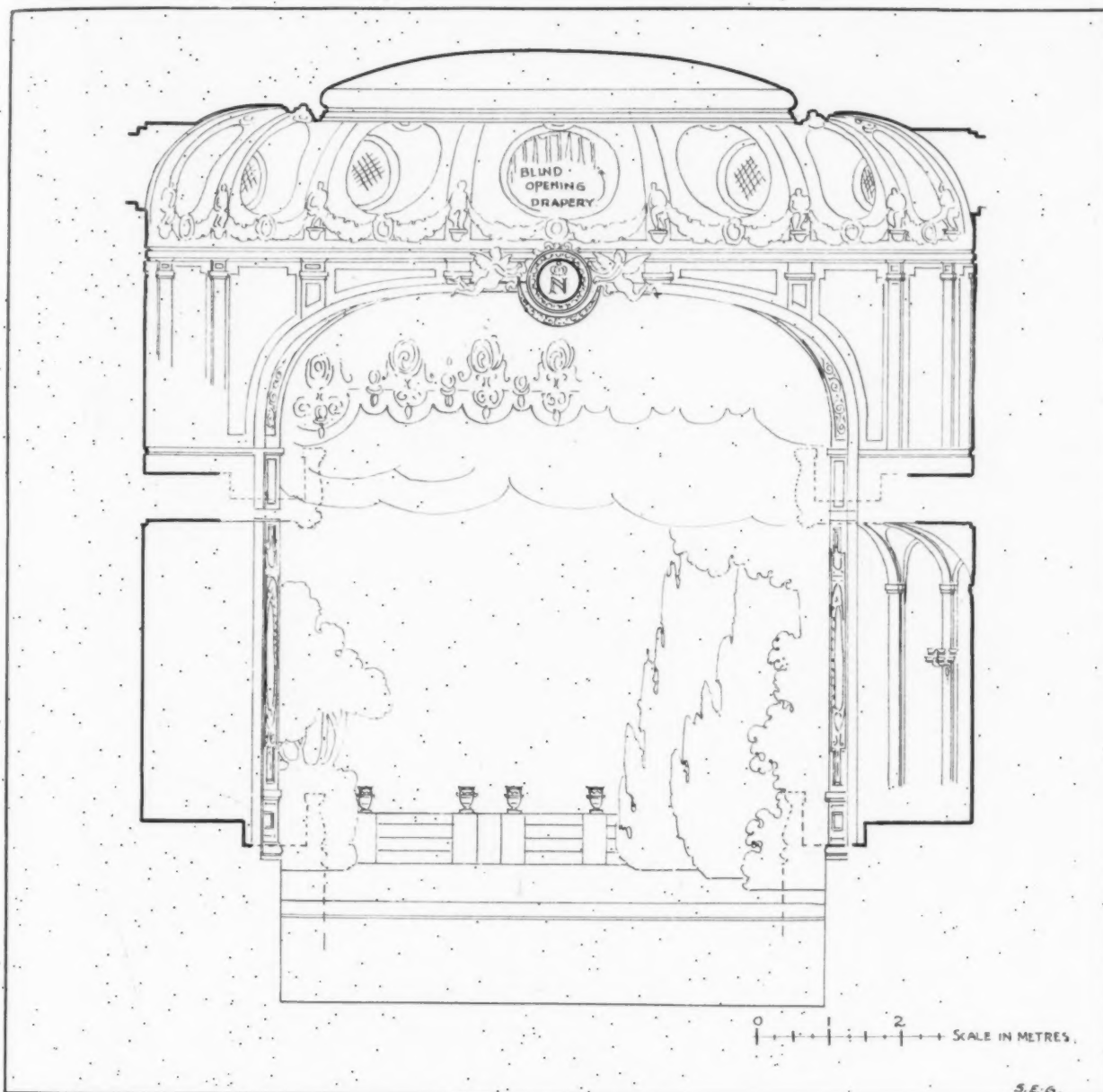
TRANSVERSE SECTION.



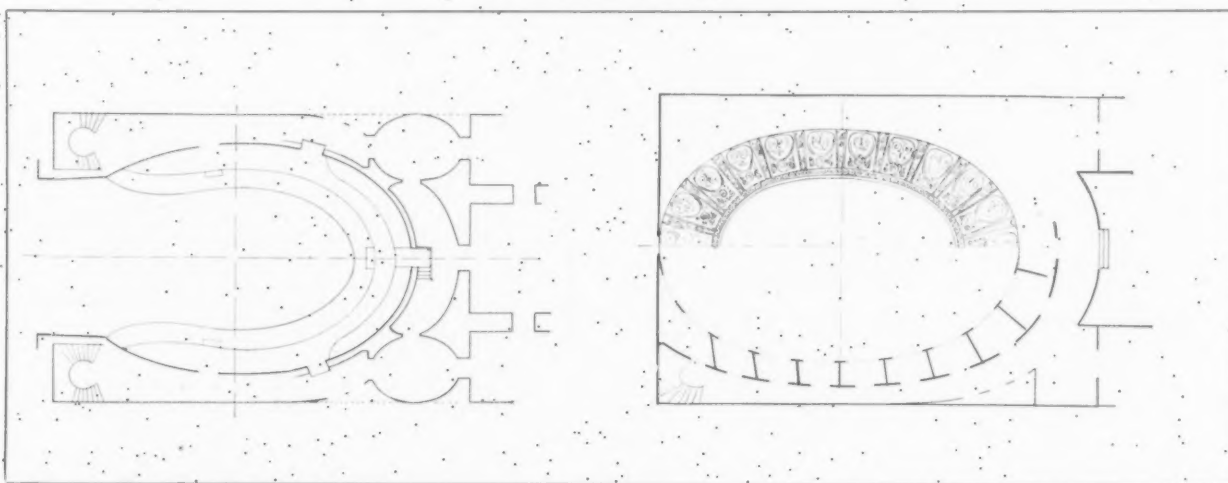
PLAN OF ORCHESTRA

BALCONY PLAN

IMPERIAL THEATER AT FONTAINEBLEAU



ELEVATION OF STAGE

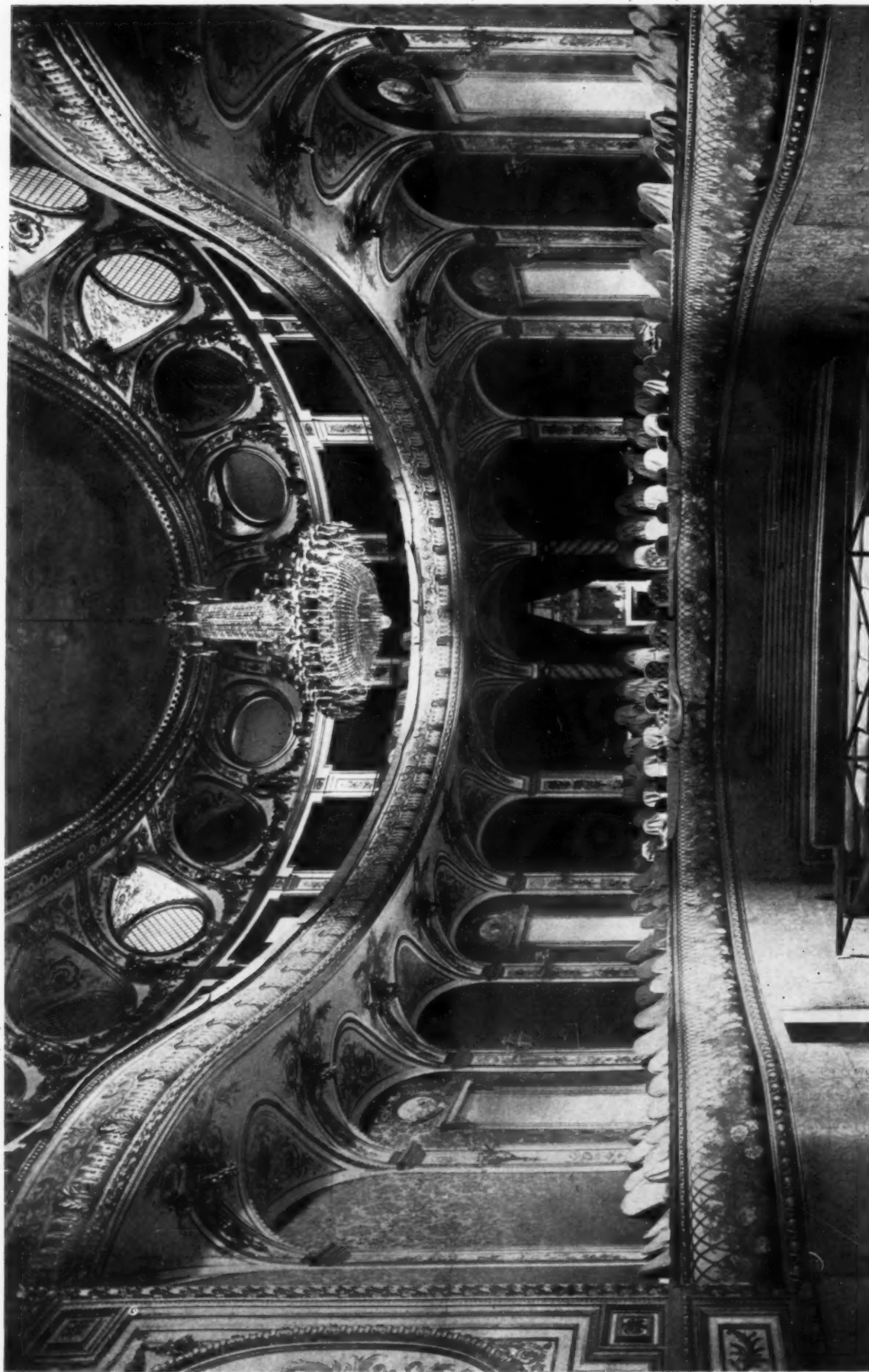


SECOND BALCONY

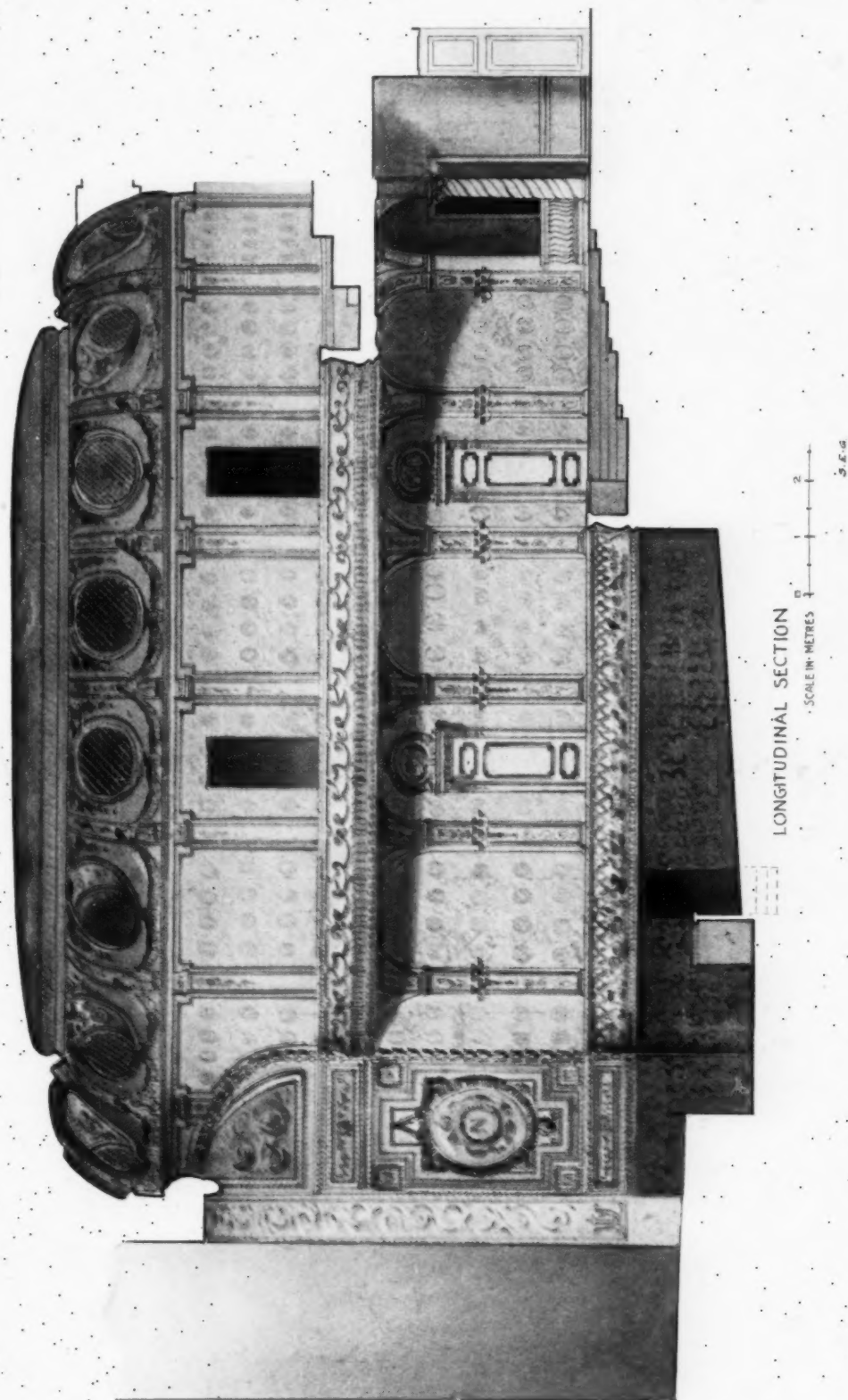
PART OF CEILING AND LOGES

IMPERIAL THEATER AT FONTAINEBLEAU

From Measured Drawings by Samuel E. Gideon



THE ROYAL TIER
IMPERIAL THEATER AT FONTAINEBLEAU



LONGITUDINAL SECTION

SCALE IN FEET 0 1 2

SCALE IN METRES 0 1 2 3.65

IMPERIAL THEATER AT FONTAINEBLEAU

Measured, Drawn and Colored by Samuel E. Gidron



DÉTAIL OF PROSCENIUM REVEAL

IMPERIAL THEATER AT FONTAINEBLEAU

DECORATION & FURNITURE

Combining Furniture of Different Periods

By ALFRED LOWDEN

AMERICA is often called the "melting pot" of the nations. We pride ourselves upon the fact that we can take material from every clime and mould it into a unity of strength and good citizenship. But when using, in combination, furniture of different periods, we are arrant cowards. The first thing a client asks a decorator is, "Can I use a French or Italian chair with my English furniture?" In nine cases out of ten the client possesses a typical modern apartment, with stereotyped plain or paneled walls, and a few pieces of English or French furniture, as the case may be. The client seems to think that by placing furniture of one particular style in the first room that happens to suit his fancy, that room is at once transformed into a French, English or Spanish type of room, whereas to have a room true to a particular period it is necessary to have all architectural details correct, as well as the character of the furniture in keeping with the period. To have a proper

Louis XV room, attention must be given to the ceiling, paneling, draperies and rugs; as well as to the furniture. So why not get rid of the period bugaboo, and strive for a harmonious combination of different periods and styles?

With early American furniture it is consistent and effective to use French provincial pieces, forming a delightful combination. The simplicity and naïve charm of the French peasant and early American furniture seem to spring from the same source,—the desire for sturdy utility combined with unsophisticated grace. These French pieces are also frequently inexpensive; as well as being particularly suitable for the furnishing of the average country home or small city apartment. Plain or gaily figured chintzes combined with these types of furniture give a domestic atmosphere and unostentatious sense of cheer and hospitality, which the more formal styles often lack.

Furniture of the styles of Louis XVI and the



Photos Loaned by John H. Hutton, Inc.

An Informal Arrangement of Furniture of Various Styles in a Small Living Room



Furniture of Many Styles Is Placed in An Italian Setting with Pleasing Results

Adam brothers may be combined with perfect propriety. Both are true to Classical tradition and all in complete unity, since the Adam style derived its inspiration largely from that of Louis Seize, and mingles agreeably with its French *coufrere*. A more delightful room for formal occasions than one containing furniture of the period of the last Louis and that of the Adam brothers cannot be imagined. Walls of an agreeable Adam green, with draperies of material with Classical motifs, produce a dignified and stately ensemble, in which entertaining becomes a delightful as well as a highly graceful function.

The present revival of interest in Spanish furniture and household art in this country is singularly fortunate. Spain is really the one country left today that still has its own private collections of domestic art. So far it has been extremely difficult to penetrate beyond those beautiful wrought iron grilles and to carry away many of the rare and beautiful pieces within. The Spaniard loves his home and jealously guards its contents. So, if you are fortunate enough to possess even one or two Spanish pieces, don't sigh for the moon and wish for the unattainable, for you can very easily fill out your scheme of furnishing with Italian or English furniture of the later seventeenth and early eighteenth centuries, and yet have a room with more interest than a purely Spanish room might possess. For modern use a Spanish room is likely to be a little too austere, and perhaps a trifle too suggestive of mustiness and discomfort; but a few well selected Spanish pieces, it cannot be denied, lend dignity to a room.

Located on the roof of one of New York's tall buildings there is an attractive apartment which has a decidedly Spanish atmosphere, though most of the furniture is really French and English. Crimson



A Grouping of Furniture of the Italian Renaissance, Elizabethan, and Queen Anne Periods

draperies of antique damask against old parchment tinted stucco walls definitely establish the Spanish character in spite of the scarcity of Spanish furniture. A fine old Spanish refectory table, with characteristic wrought iron stretcher, is placed before a studio window, with its hangings of crimson damask. An antique vestment of velvet in soft shades of green and crimson thrown over this table helps to bring out the patina of the mellow old wood, creating a delightful sense of color and richness. On one side of the room is an old Gothic chest, in perfect harmony with a near-by English sofa, covered with an exotic patterned crewel. Some typical Spanish arm chairs and monks' stools lend dignity and atmosphere that are altogether delightful. At the far end of the room is a Louis XVI desk of simple lines, which is in entire harmony with the other old pieces.

The most difficult furniture to handle is perhaps that of the period of Queen Anne. The ball and claw foot and cabriole leg seem to insist on their own rights, and are likely to refuse association with pieces of other periods. I have, however, seen it used successfully when combined with pieces of the William and Mary era and the more simple types of Chippendale. Even furniture of the whimsical type of Louis XV may be used with that of the more substantial periods. For years we have been under the impression that draperies to be used with period furniture and antiques should always be of fine damasks and brocades. This is another fetish, since linen can be used without spoiling the effect and atmosphere of the room; in fact an attractive linen has often more character and beauty than a more pretentious material, producing a delightful and informal note in keeping with the democratic character of our lives.